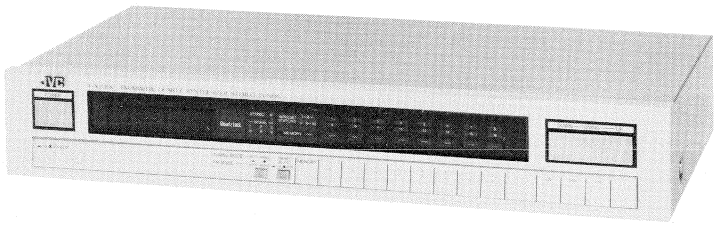
JVC

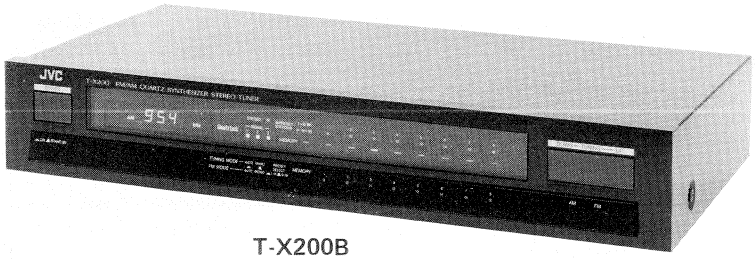
SERVICE MANUAL

FM/AM QUARTZ SYNTHESIZER STEREO TUNER

MODEL T-X200/T-X200B
MODEL T-X200L/T-X200LB



T-X200L



T-X200B

Model	Version	
	Feature	Color
T-X200	—	Silver
T-X200L	with LW	Silver
T-X200B	—	Black
T-X200LB	with LW	Black

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Parts List . . . . . Separate-volume Insertion

This manual combines two single volumes; Service manual and Parts list.

No. 2721
Jan. 1984

Safety Precaution

1. The design of this product contains special hardware, many circuits and components specially for safety purposes.
   For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list in Service manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and/or the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard.
   When service is required, the original lead routing and dress should be observed, and they should be confirmed to be returned to normal, after re-assembling.
5. Leakage current check
   (Safety for electrical shock hazard)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the Products (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5 mA AC (r.m.s.).
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1500 Ω 10 W resistor paralleled by a 0.15 μF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).

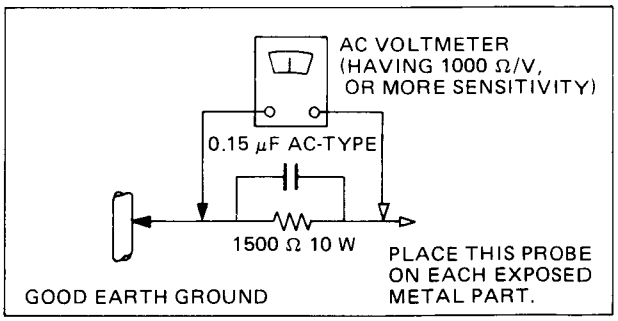
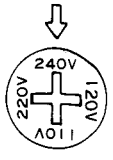


Fig. 1

CHECKING YOUR LINE VOLTAGE (For U.S. Military Market and Other Countries)
Before inserting the power plug, please check this setting to see that it corresponds with the line voltage in your area. If it doesn't, be sure to adjust the voltage selector switch to the proper setting before operating this equipment. The voltage selector switch is located on the rear panel.



CAUTION: Before selecting the "Voltage selector switch" to proper voltage, disconnect the power plug.

1. Specifications

FM SECTION (Based upon IHF Standard)

Tuning range : 87.5–108.0 MHz
(T-X200: for 100 kHz step)
(T-X200L: for 50 kHz step)
Usable sensitivity : 0.95 μV/75 ohms (10.8 dBf)
50 dB S/N sensitivity
Mono : 1.8 μV/75 ohms (16.3 dBf)
Stereo : 22 μV/75 ohms (38.1 dBf)
Signal-to-Noise ratio
Mono : 80 dB (73 dB DIN)
Stereo : 76 dB (70 dB DIN)
Distortion
Mono : 0.15% (1 kHz)
Stereo : 0.2% (1 kHz)
Capture ratio : 1.5 dB
Alternate channel selectivity : 60 dB, ±400 kHz
(55 dB, ±300 kHz, DIN)
Image rejection : 80 dB
IF rejection : 90 dB
AM suppression : 55dB
Stereo separation : 45dB (at 1 kHz)
Frequency response: 30 Hz–15 kHz (+0.3 dB, –3.0 dB)
Output level/impedance: 600 mV/2.2 kohms (600 mV DIN)

MW SECTION

Tuning range : 520–1710 kHz (for 10 kHz step)
522–1611 kHz (for 9 kHz step)
Sensitivity
Bar antenna : 300 μV/m
Total harmonic distortion : 0.5%
Signal-to-Noise ratio: 50 dB
Selectivity : 40 dB, ±9 kHz
Image rejection ratio: 50 dB
IF rejection ratio : 60 dB

LW SECTION (T-X200L only)

Tuning range : 153–360 kHz
Sensitivity : 400 μV/m (Bar antenna)
Total harmonic distortion : 0.5%
Selectivity : 40 dB, ±9 kHz
AM output level/impedance : 200 mV/2.2 kohms

DIMENSIONS : 77(H) x 435(W) x275(D) mm
(3" x 17-1/8" x10–7/8")
WEIGHT : 3.0kg (6.6lbs)

Design and specifications are subject to change without notice.

POWER SPECIFICATIONS

Areas	Line Voltage & Frequency	Power Consumption	
		Power ON	Standby
U.S.A. & Canada	AC 120 V, 60 Hz	9 watts	1 watt
Continental Europe	AC 220 V∿, 50 Hz	9 watts	1 watt
U.K. & Australia	AC 240 V∿, 50 Hz	9 watts	1 watt
Other areas	AC 110/120/220/240 V∿, Selectable, 50/60 Hz	9 watts	1 watt

2. Names of Parts and Their Functions

T-X200/T-X200B

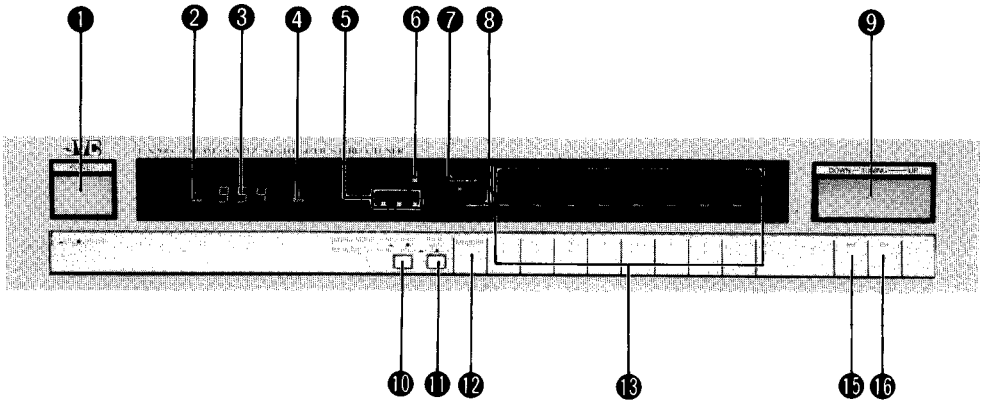


Fig. 1

❶ POWER switch

ON (▬) : Press to this position to listen to broadcast.

STANDBY (▮) : When the power cord is plugged into the AC wall outlet, the preset stations are not subject to cancellation or alteration.The preset data is maintained even in the case of a power failure or when tce power cord is disconnected, if the period power is not applied does not exceed a couple of days.

❷ AM/FM indicator

❸ Frequency indicator

❹ Frequency unit indicatnr (MHz, kHz)

❺ SIGNAL strength indicator

This is used in tuning to both FM and AM (MW/LW) broadcasts. The greater the number of LEDs that light, the stronger the signal being recived.

❻ SETREO indicater

This LED lights only when you are tuned to an FM stereo broadcast with the TUNING MODE/FM MODE switch to AUTO/AUTO (▬).

❼ PRESET SELECT indicator

When the PRESET SELECT switch is set to its "in" (▬) position, the 1 - 8 indicator lights ; in the "out" (▮) position, the 9 - 16 indicator lights.

❽ MEMORY indicator

When the MEMORY button is pressed, this MEMORY indicator lights to show that the unit is ready to store the preset frequency in memory. This indicator will go out automatically in about 5 sec. or when the station select button is pressed.

❾ UP/DOWN TUNING button

Auto tuning

UP-scanning button :

When this side is pressed and released the frequency changes in the direction of increasing frequencies. Scanning (Auto Tuning) stops automatically when the next FM (or AM) broadcast is detected. The frequency is displayed digitally by the frequency indicator.

When you keep this button depressed, scanning does not stop even if broadcasts are detected.

DOWN-scanning button :

Press to tune in the direction of decreasing frequencies. Functions are identical with those of the UP-scanning button.

Note :

- **scanning starts when the UP or DOWN button is pressed and is stopped by pressing the TUNING MODE switch.**

Manual tuning

Manual tuning is possible by pressing the TUNING MODE switch. When the UP/DOWN-scanning button is pressed, the frequency changes in predetermined steps (see table below).Tapping this button changes the tuner step by step ; pressing continuously (more than 0.5 sec.) changes tuning by high speed scanning which stops when the button is released.

T-X200L/T-X200LB

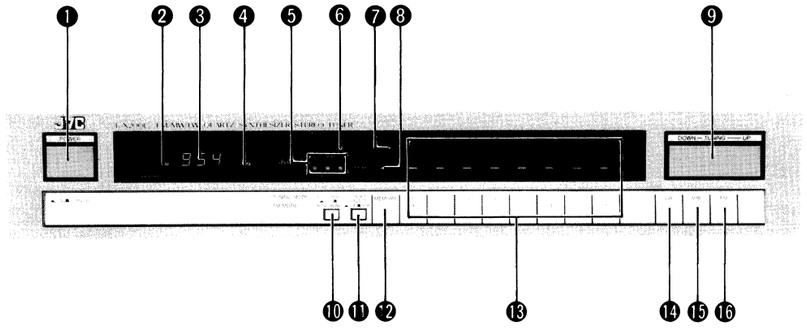


Fig. 2

Channel spacing
AM channel spacing switch (Not provided on tuners for the USA, Canada, U.K., Australia and Continental Europe.) is provided on the rear panel for selecting 9 kHz or 10 kHz steps according to your area.

Area \ Band	FM	AM (MW)	AM (LW)
U.S.A., Canada	100 kHz	10 kHz	–
Continental Europe, U.K., Australia	50 kHz	9 kHz	1 kHz
Others areas	*50 kHz	*9 kHz	–
	100 kHz	10 kHz	

*Preset at the factory.

⑩ TUNING MODE/FM MODE switch
This switch is used to select both the FM AUTO/MONO mode and AUTO/MANU scanning mode. These functions are related to each other. When stereo reception is possible, set this switch to AUTO/AUTO (▂) for auto tuning. When signal are too weak to be received by auto tuning, set to MANU/MONO (▮) for manual tuning and the left and right channel FM signals are mixed and heard from both speakers.

⑪ PRESET SELECT switch
Press to set to channels 1 - 8 (▂) or channels 9 - 16 (▮). The 1 - 8 or 9 - 16 LED in the PRESET SELECT indicator lights.
Up to 16 stations FM and AM (MW/LW) can be preset at random.

Note :
- **To set to channels 1 - 8 from the channels 9 - 16 or vice versa, first press the PRESET SELECT switch then press one of the station select buttons.**

⑫ MEMORY button
Press this button and the memory indicator will light to show that the unit is ready to receive a frequency to be held in memory. (This button is non-locking.) Pressing the station select button while the MEMORY indicator is lit (for about 5 sec.) makes it possible to store the frequency being received in memory. When the MEMORY indicator is not lit, the memory function does not operate.

⑬ Station select buttons/station indicators
These buttons are used to select one of the preset stations or to store the station frequency in memory. When one of these buttons is pressed, the LED over the button will light to show the preset station. If one of these buttons is pressed when the MEMORY button is pressed in, the frequency which is being received will be stored in memory.
If you change the mode from radio reception to any other mode including switching the power-off and back to radio reception, the station previously selected with the station select buttons remains tuned in.

⑭ LW button (T-X200L/T-X200LB only)
⑮ AM (MW) button
⑯ FM button

3. Main Parts Location and Removal Procedures

3-(1) Main Parts Location

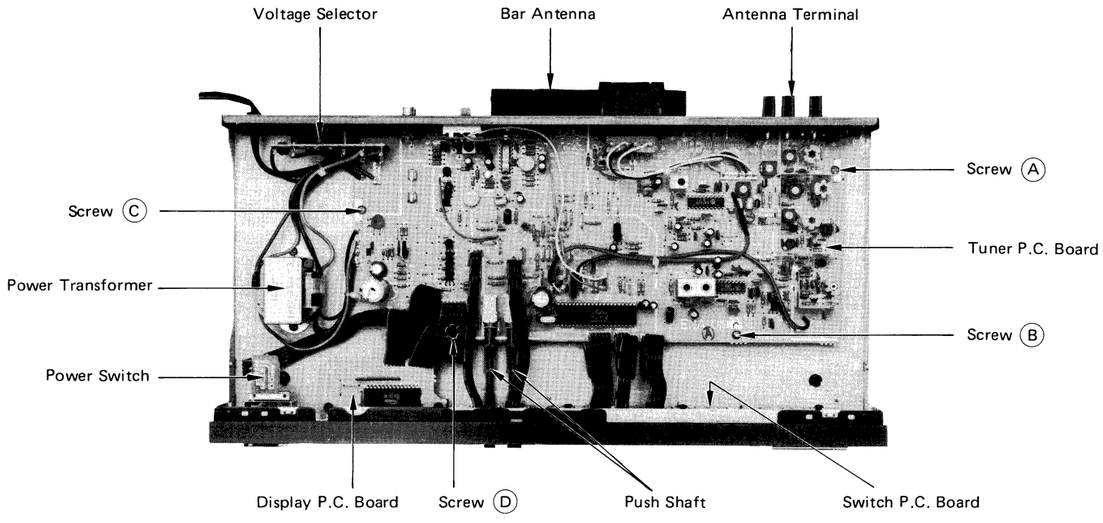


Fig. 3

3-(2) Removal Procedures

1. Metal Cover
(1) Remove the five screws (provided on the sides and back) which secure the metal cover.
(2) Draw off the metal cover backwards carefully.

2. Front Panel (See Fig. 4.)
(1) Remove the metal cover. (Refer to the above.)
(2) Remove the two plastic rivets and the four screws (provided on the upper & lower sides) which secure the front panel.

3. Tuner P.C. Board (See Fig. 3 and Fig. 5.)
(1) Remove the metal cover. (Refer to the above.)
(2) Remove the four screws Ⓐ ~ Ⓓ (provided on the P.C. board surface) which secure the tuner P.C. board.
(3) Remove the four screws which secure the rear panel from its bottom.
(4) Pull out the two push-shafts from the push-switch.

4. Switch P.C. Board and Display P.C. Board
(1) Remove the metal cover. (Refer to the above.)
(2) Pull out the two (or three) plastic rivets (provided on the P.C. board surface) which secure the P.C. board.

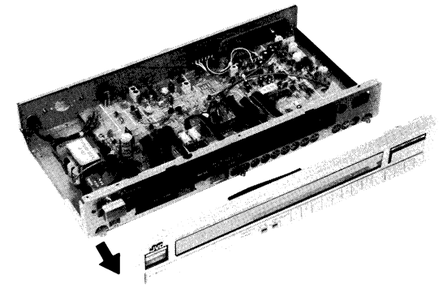


Fig. 4

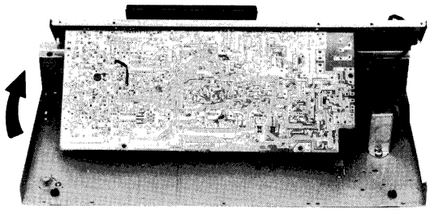
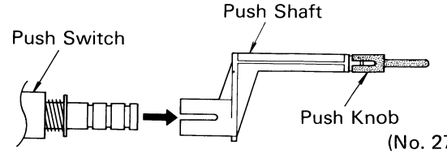


Fig. 5



4. FM/MW/LW Tuner Alignment Producedures

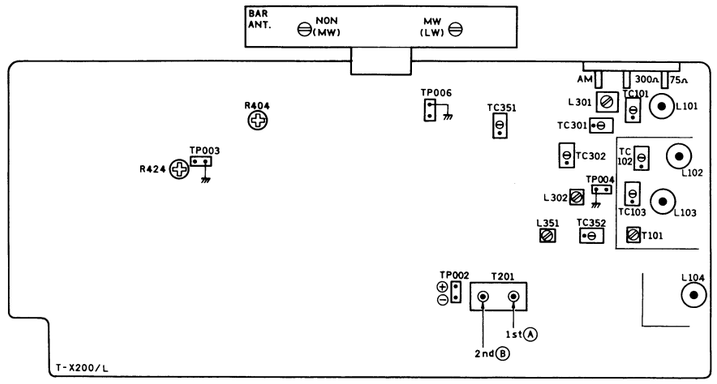


Fig. 6

4-(1) Frontend section

L104:	FM oscillator tuning coil	Tune in to 108.0 MHz. Adjust the voltage at TP004 to 8.3 ± 0.2 V.
L101:	FM ANT tuning coil	Maximize the sensitivity at 89.9 MHz.
L102:	FM RF1 tuning coil	
L103:	FM RF2 tuning coil	
T101:	FM IF transformer	
TC101:	FM ANT tuning trimmer	Maximize the sensitivity at 105.9 MHz.
TC102:	FM RF1 tuning trimmer	
TC103:	FM RF2 tuning trimmer	

4-(2) FM section

T201:	FM detector coil	Connect a DC VTVM to TP002 and adjust the core (A) of T201 for the DC VTVM reading of 0 mV. Receiving a mono signal, adjust the core (B) of T201 so that the distortion is minimized.
R424:	MPX VCO free-run frequency adjusting resistor	Connect a frequency counter to TP003 and adjust R424 so that the free-run frequency becomes 76 kHz.
R404:	Stereo separation adjusting resistor	Tune in to 98.1 MHz. Adjust it so that the channel separation becomes maximum.

4-(3) MW section

L302:	MW oscillator tuning coil	Tune in to 522 (or 520) kHz. Adjust the voltage at TP004 to 1.2 ± 0.1 V (or 0.95 ± 0.1 V).
TC302:	MW oscillator tuning trimmer	Tune in to 1611 (or 1710) kHz. Adjust the voltage at TP004 to 8.3 ± 0.2 V (or 9.0 ± 0.2 V).
L301:	MW antenna tuning coil	Maximize the sensitivity at 603 kHz.
— :	MW bar antenna coil	
TC301:	MW antenna tuning trimmer	Maximize the sensitivity at 1404 kHz.

4-(4) LW section

L351:	LW oscillator tuning coil	Tune in to 153 kHz. Adjust the voltage at TP005 to 1.7 ± 0.1 V.
TC352:	LW oscillator tuning trimmer	Tune in to 360 kHz. Adjust the voltage at TP005 to 8.5 ± 0.1 V.
— :	LW bar antenna coil	Maximize the sensitivity at 164 kHz.
TC351:	LW antenna tuning trimmer	Maximize the sensitivity at 353 kHz.

Note: After adjustment, confirm that the band cover is in the following range (for West Germany only):
FM: Lower 87.5 MHz – 300 kHz, Higher 108.0 MHz + 500 kHz

5. Block Diagram

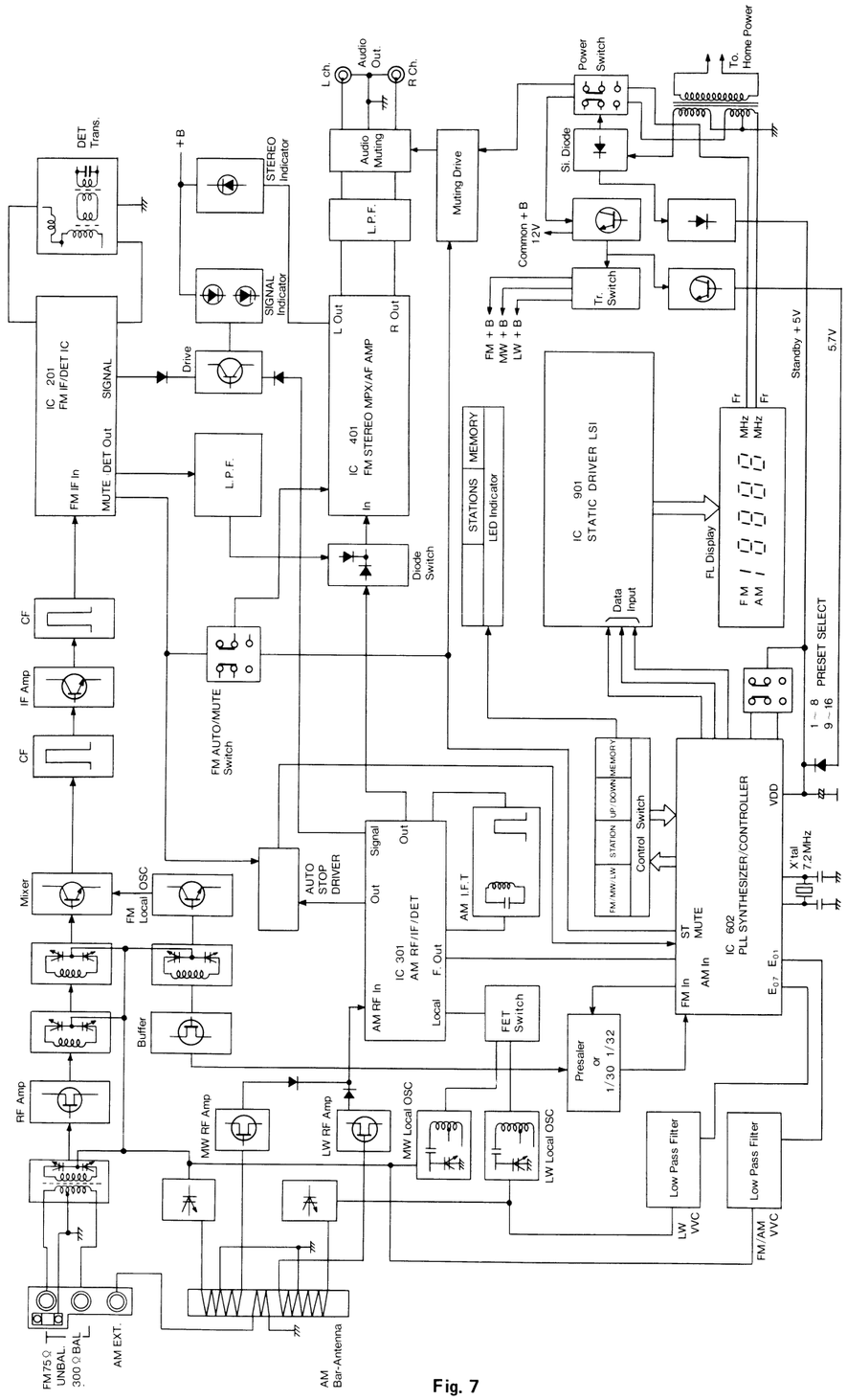
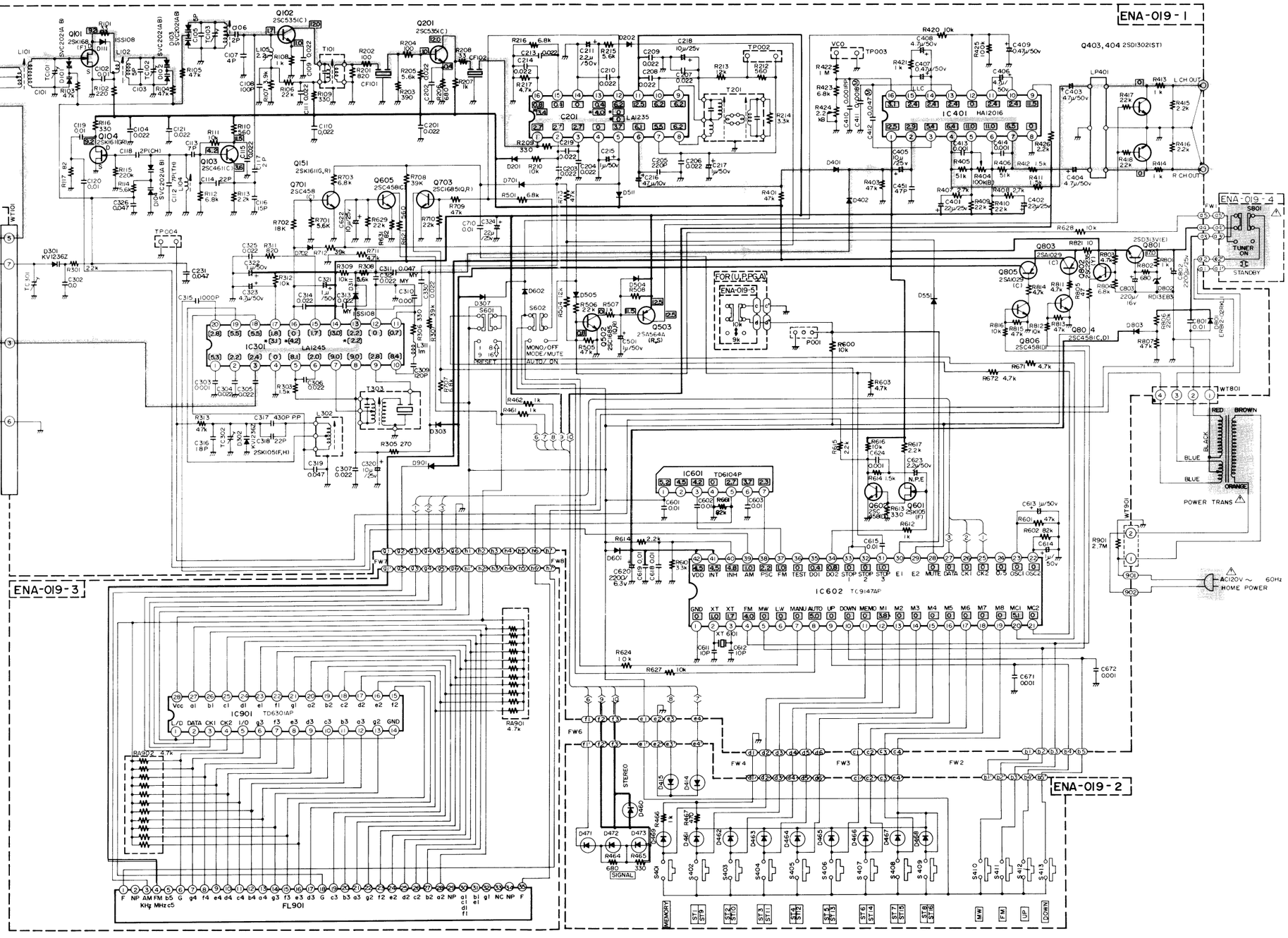


Fig. 7

6. T-X200/T-X200L Schematic Diagram

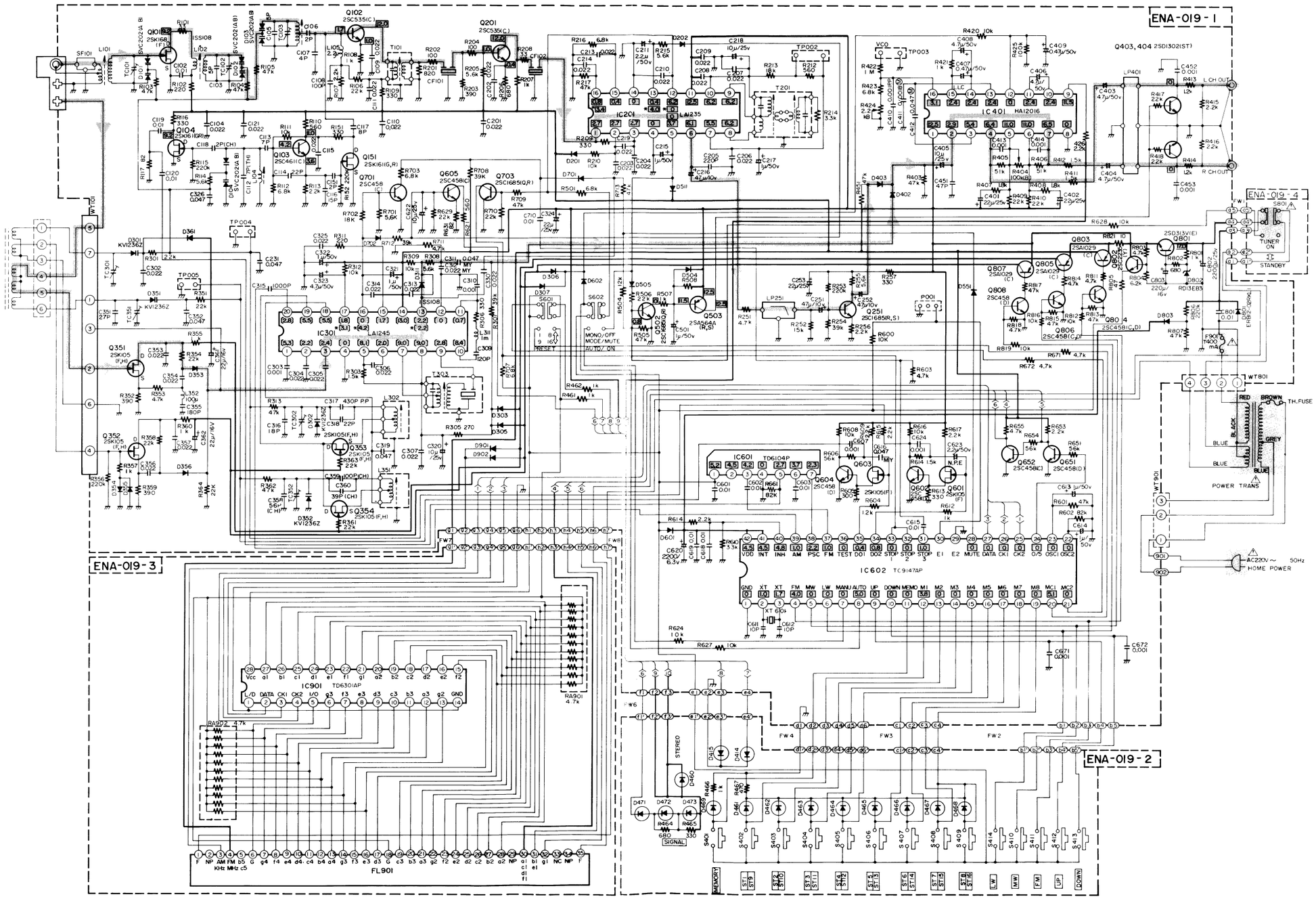
6-(1) T-X200 Tuner Section



Notes:

1. ▭ shows DC voltage to the chassis with no signal input.
2. —— indicates positive B power supply.
3. - - - - - indicates negative B power supply.
4. ▒ indicates signal path.
5. When replacing the parts in the darkened area (▒) and those marked with ⚠ , be sure to use the designated parts to ensure safety.
6. This is the standard circuit diagram.
   The design and contents are subject to change without notice.

6-(2) T-X200L(G) Tuner Section (for West Germany only)



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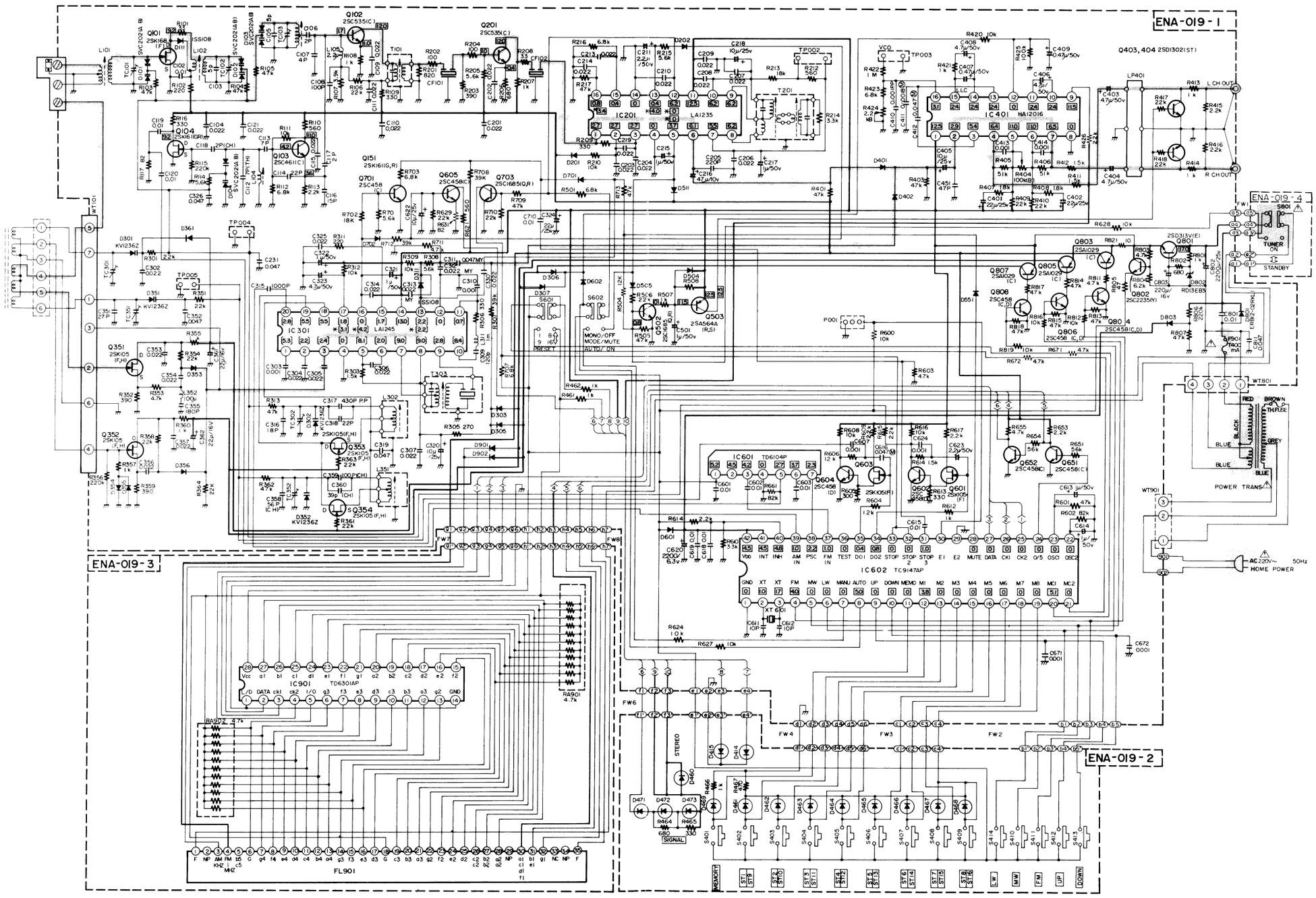
6-(3) T-X200L Tuner Section



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6. This is the standard circuit diagram.
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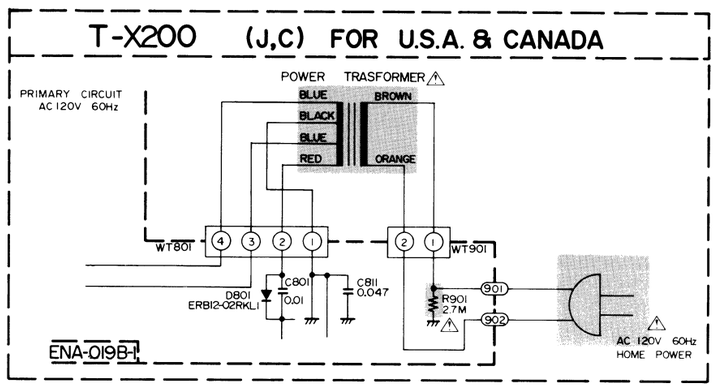
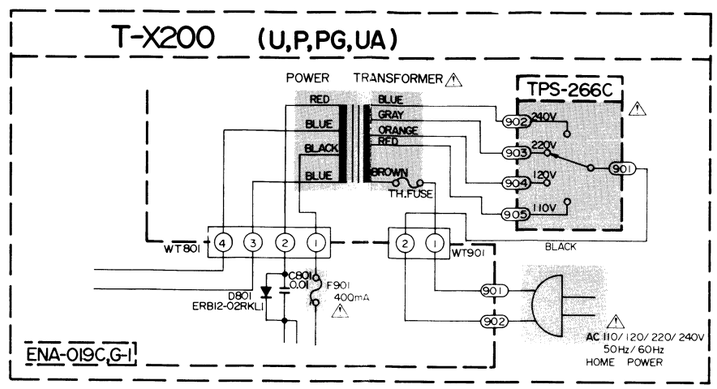
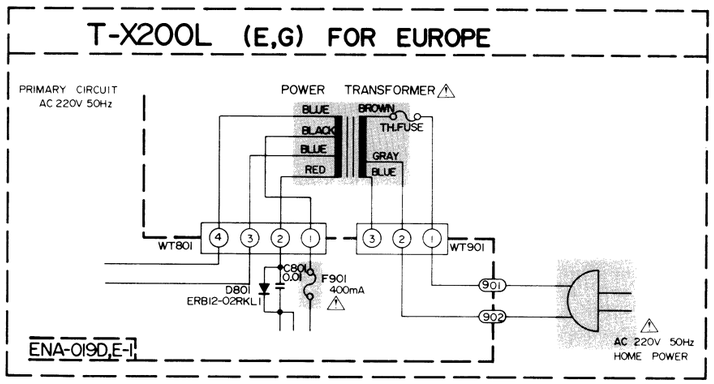
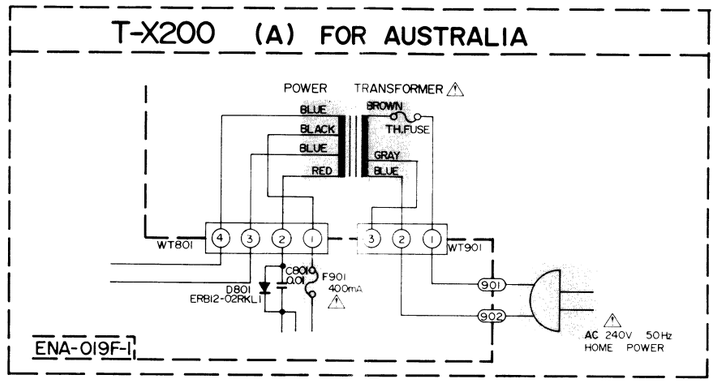
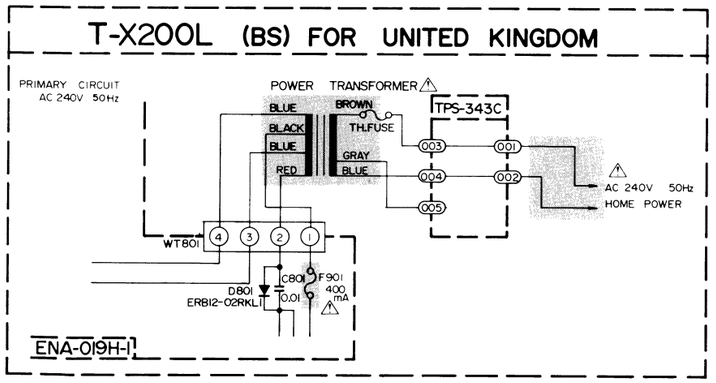
6-(4) T-X200/T-X200L Power Supply Section





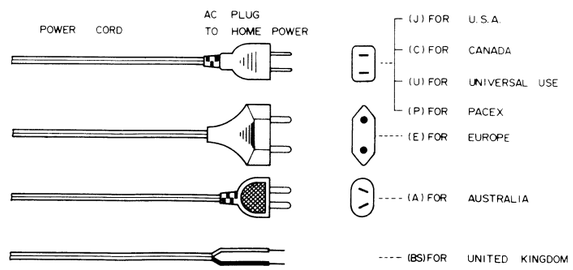


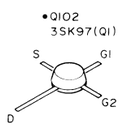


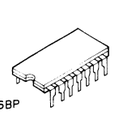


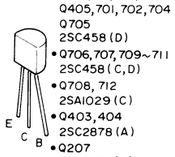
NOTE : T-X200 U, P, PG, UA

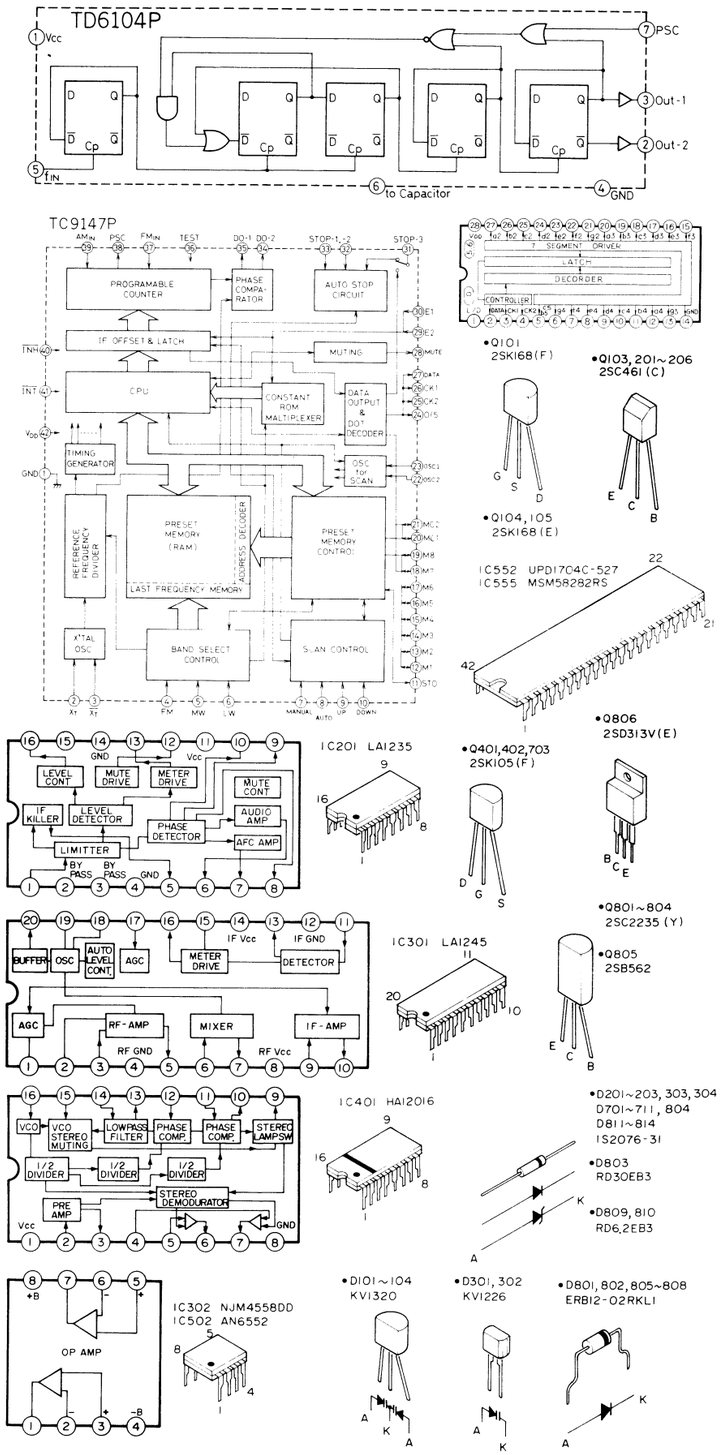
VOLTAGE SELECTOR (MOUNTED ON THE PEAR PANEL) MUST BE ADJUSTED FOR THE PROPER VOLTAGE OF HOME POWER











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4. ▭ indicates signal path.
5. When replacing the parts in the darkened area (▭) and those marked with ⚠ , be sure to use the designated parts to ensure safety.
6. This is the standard circuit diagram.
   The design and contents are subject to change without notice.

PARTS LIST

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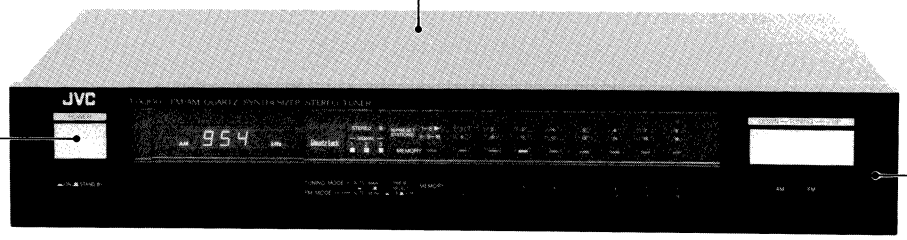
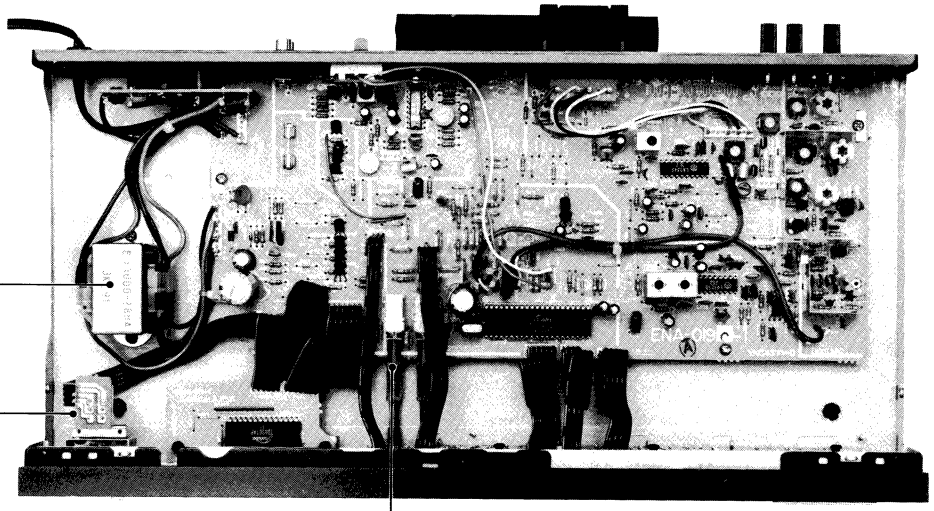
1. Main Parts Locations

1-(1) Front View

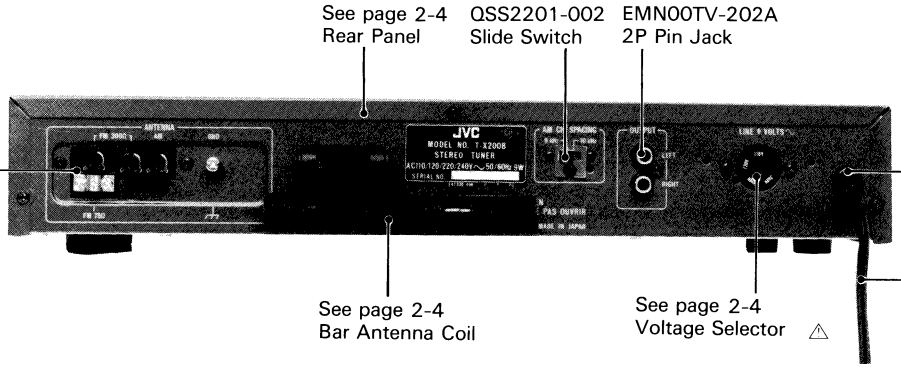


1-(2) Top View



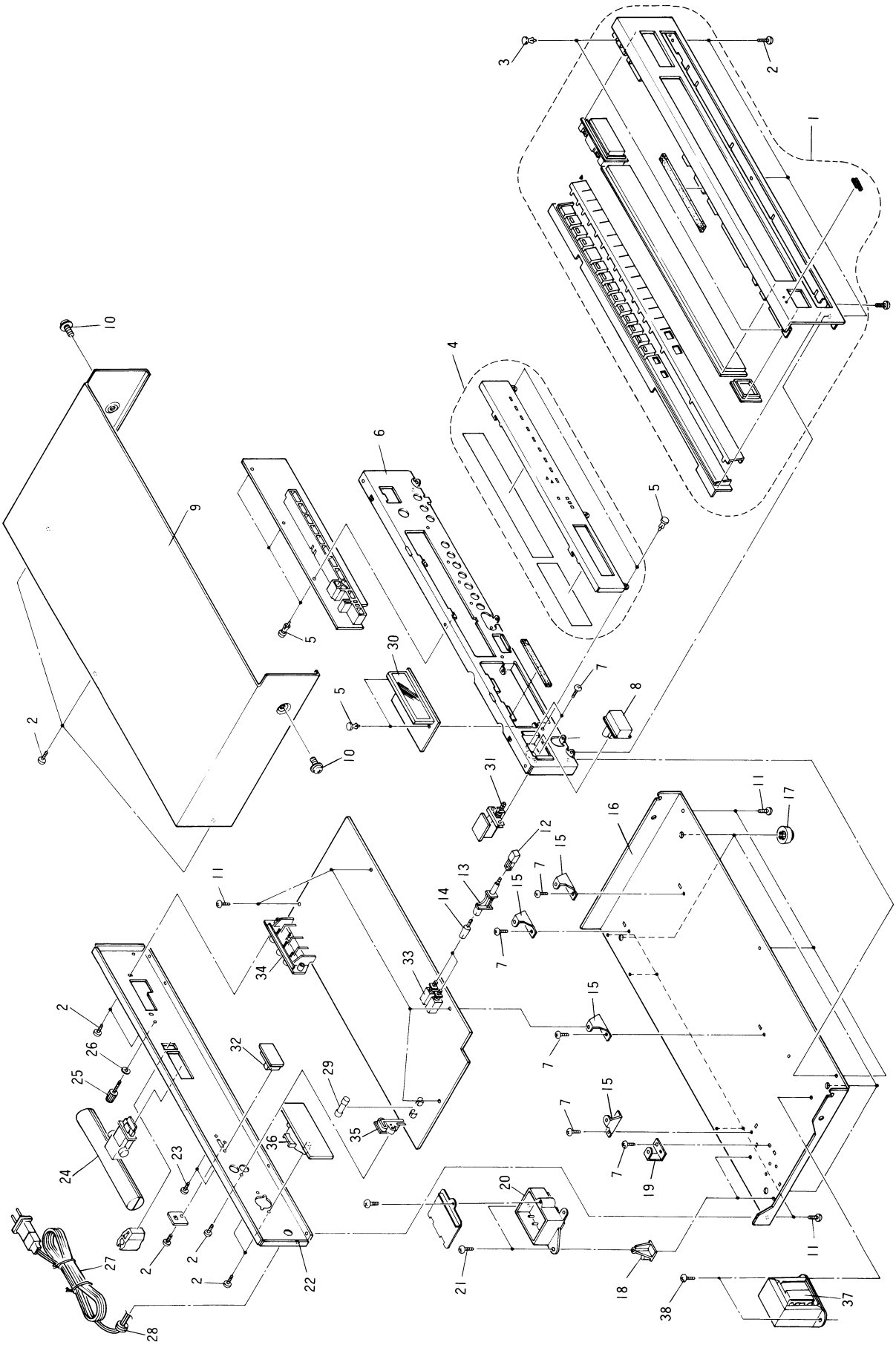
⚠ : Safety Parts

1-(3) Rear View



⚠ : Safety Parts

2. Exploded View and Part Numbers



No.	Part Number	Part Name	Q'ty	Description	Area
1	EFP-TX200E	Front Panel Ass'y	1	Silver	J,C,P,PG
	EFP-TX200BE	Front Panel Ass'y	1	Black	J,C,P,PG
	EFP-TX200U	Front Panel Ass'y	1	Silver	A,U,UA
	EFP-TX200BU	Front Panel Ass'y	1	Black	A,U,UA
	EFP-TX200LE	Front Panel Ass'y	1	Silver	LBS,LE,LES,LG
	EFP-TX200BLE	Front Panel Ass'y	1	Black	LBS,LE,LES,LG
2	SBSB3008N	Screw	13	Silver	
	SBSB3008M	Screw	13	Black	
3	E48729-009	Prastic Rivet	2		
4	E24670-001SA	Back Plate Ass'y	1	Silver	
	E24670-003SA	Back Plate Ass'y	1	Black	
5	E48729-008	Prastic Rivet	7		
6	E24669-001	Front Bracket	1		
7	E65119-001	Screw	6		
8	VXP3108-001	Power Push Knob	1	Silver	
	VXP3108-002	Power Push Knob	1	Black	
9	E24661-001	Metal Cover	1	Silver	
	E24661-002	Metal Cover	1	Black	
10	E61660-001	Screw	4	Silver	
	E61660-004	Screw	4	Black	
11	SBSB3008N	Screw	17		
12	E69169-001	Push Knob	2	Silver	
	E69169-002	Push Knob	2	Black	
13	E67632-003	Push Shaft	2		
14	E66226-001	Push Shaft	2		
15	E68587-001	Bracket	4		
16	E24658-001	Chassis Base	1		
17	E301258-002	Foot	4		
18	E67448-001	Holder	2		LBS
19	E71382-001	Bracket	1		LBS
20	E302244-003	C.B.Case	1		LBS
21	SBSB3010Z	Screw	2		LBS
22	E24556-015	Rear Panel	1	Silver	J,C,
	E24556-016	Rear Panel	1	Black	J,C
	E24556-005	Rear Panel	1	Silver	U,P,PG,UA
	E24556-010	Rear Panel	1	Black	U,P,PG,UA
	E24556-006	Rear Panel	1	Silver	A,LE,LBS
	E24556-011	Rear Panel	1	Black	A,LE,LBS
	E24556-007	Rear Panel	1	Silver	LG
	E24556-012	Rear Panel	1	Black	LG
	E24556-008	Rear Panel	1	Silver	LES
	E24556-013	Rear Panel	1	Black	LES
23	SPST2604N	Screw	2	Silver	
	SPST2604M	Screw	2	Black	
24	EQB3101-001	Bar Antenna Coil	1		J,C,U,P,PG,UA,A
	EQB3204-004	Bar Antenna Coil	1		LE,LES,LBS,LG
25	E61367-001	GND Terminal	1		
26	WNS3000N	Washer	1		
⚠27	QMP1200-200	Power Cord	1		J,C
	QMP7600-250	Power Cord	1		U,P,PG,UA
	QMP2560-244	Power Cord	1		A
	QMP3900-200	Power Cord	1		LE,LES,LG
	QMP9017-008BS	Power Cord	1		LBS
28	QHS3876-162	Cord Stopper	1		C,U,P,PG,A,LE,LES,LG,UA
	QHS3876-162BS	Cord Stopper	1		LBS
⚠29	QMF51A2-R40L	Fuse	1		U,P,PG,A,LE,LES,LG,UA
	QMF51A2-R40LBS	Fuse	1		LBS
30	ELU0001-013	FL Tube	1		
31	QST4102-E06	Push Switch	1		
32	QSS2201-002	Slide Switch	1		
33	QST5101-E03	Push Switch	1		
34	E03572-016	Antenne Terminal	1		J,C,U,P,PG,A,UA,LE,LES,LBS
	EMB91YV-201A	Antenne Terminal	1		LG
35	EMN00TV-201A	2P Pin Jack			
⚠36	QSR0074-001	Voltage Selector	1		U,P,PG,UA
⚠37	ETP1000-28JA	Power Transformer	1		J,C
	ETP1000-28HA	Power Transformer	1		U,P,PG,UA
	ETP1000-28EA	Power Transformer	1		A,LE,LES,LG
	ETP1000-28EABS	Power Transformer	1		LBS
38	E65389-002	Ass'y Screw	1		

The Marks for Designated Areas.

⚠ safety parts

J..... U.S.A.
C..... Canada
LE..... Europe
LG..... West Germany
A..... Australia
UA..... Republic of South Africa
P,PG..... U.S.Military Market
LES.....Spain
LBS..... U.K.
U..... Other Countries

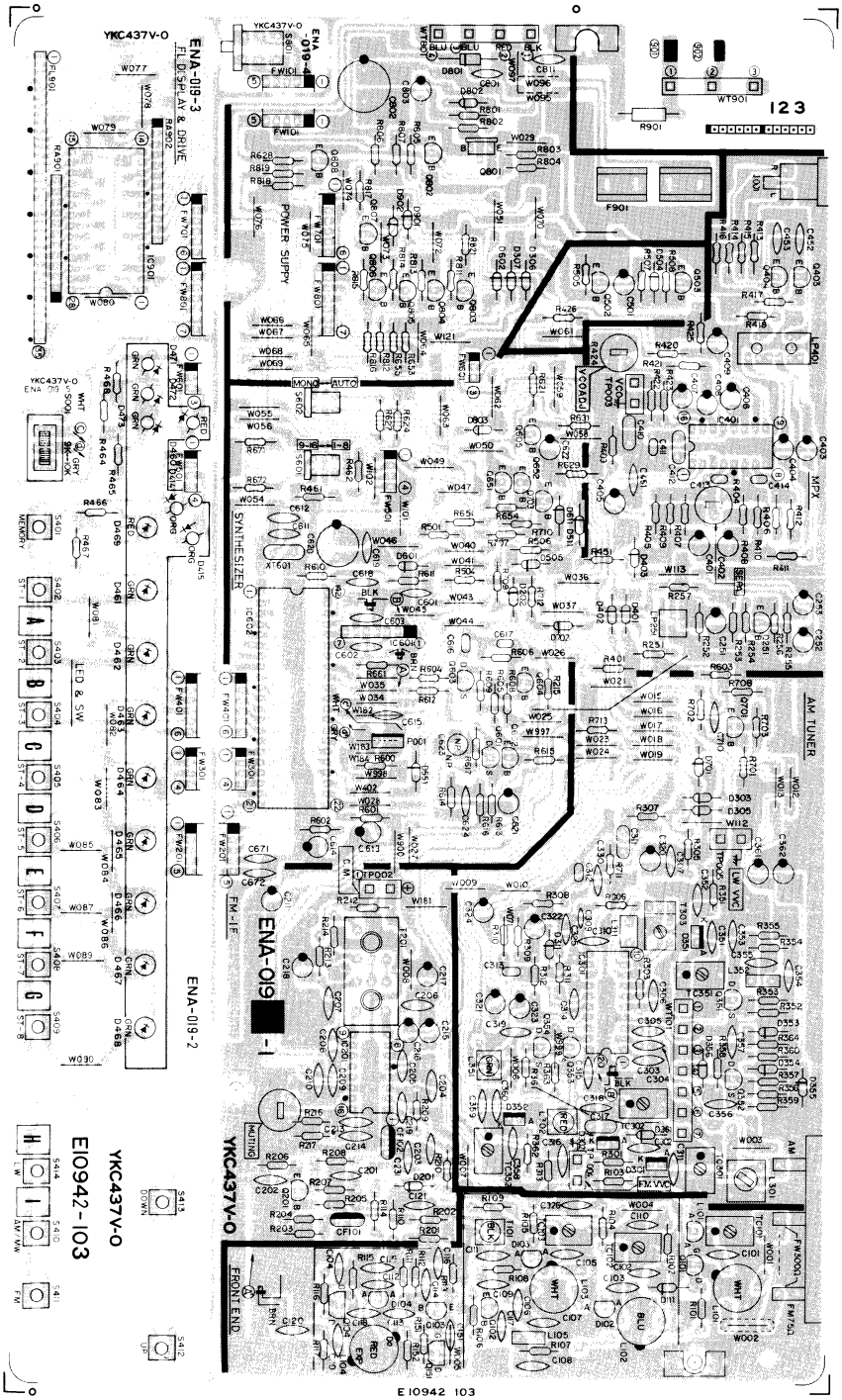
3. Printed Circuit Board Ass'y and Parts List

3-(1) ENA-019□ Tuner P.C. Board Ass'y

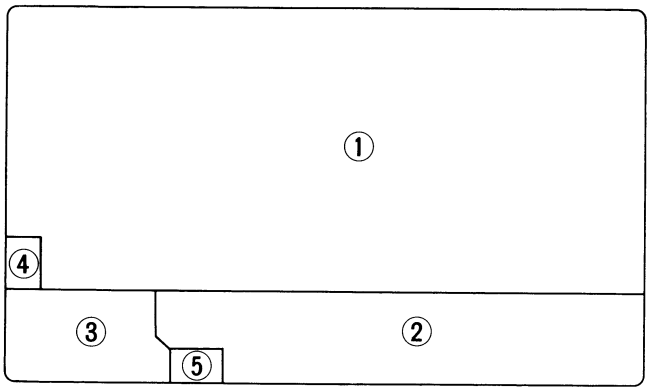
Note : ENA-019□ varies according to the area employed. See note (1) when placing on order.

Note (1)

ENA-019 B	U.S.A. & Canada
ENA-019 C	U.S.Military Market
ENA-019 D	Europe & Spain
ENA-019 E	West Germany
ENA-019 F	Australia
ENA-019 G	Republic of South Africa
ENA-019 H	U.K.



Each Individual P.C. Board Location



① ENA-019□-1 Tuner P.C. Board Ass'y
② ENA-019-2 LED & Switch P.C. Board Ass'y
③ ENA-019-3 Display & Driver P.C. Board Ass'y
④ ENA-019-4 Power Switch P.C. Board Ass'y
⑤ ENA-019-5 Channel Spacing Switch P.C. Board Ass'y

The Marks for Designated Areas	
B	U.S.A. & Canada
C	U.S.Military Market
D	Europe & Spain
E	West Germany
F	Australia
G	Republic of South Africa
H	U.K.

Transistors

ITEM	PART NUMBER	DESCRIPTION		VER
			MAKER	
Q101	2SK168(F)	SILICON	HITACHI	
Q102	2SC535(C)	SILICON	HITACHI	
Q103	2SC461(C)	SILICON	HITACHI	
Q104	2SK161(GR)	SILICON	TOSHIBA	
Q151	2SK161(GR)	SILICON	TOSHIBA	E
Q201	2SC535(C)	SILICON	HITACHI	
Q201	2SC535(C)	SILICON		
Q251	2SC1685(R.S)	SILICON		E
Q351	2SK105(F,H)	SILICON	NEC	D
Q351	2SK105(F,H)	F.E.T.	NEC	E
Q351	2SK105(F,H)	F.E.T.		H
Q352	2SK105(F,H)	F.E.T.	NEC	D
Q352	2SK105(F,H)	F.E.T.	NEC	E
Q352	2SK105(F,H)	F.E.T.		H
Q353	2SK105(F,H)	F.E.T.	NEC	D
Q353	2SK105(F,H)	F.E.T.	NEC	E
Q353	2SK105(F,H)	F.E.T.		H
Q354	2SK105(F,H)	F.E.T.	NEC	
Q354	2SK105(F,H)	F.E.T.	NEC	
Q354	2SK105(F,H)	F.E.T.		
Q403	2SD1302(T)	SILICON	MATSUSHITA	
Q403	2SD1302(T)	SILICON		
Q404	2SD1302(T)	SILICON	MATSUSHITA	
Q404	2SD1302(T)	SILICON		
Q502	2SC1685(Q,R)	SILICON	MATSUSHITA	
Q502	2SC1685(Q,R)	SILICON	MATSUSHITA	
Q503	2SA564A(R,S)	SILICON		
Q503	2SA564A(R,S)	SILICON	MATSUSHITA	
Q601	2SK105(F)	F.E.T.	NEC	
Q602	2SC458(C)	SILICON	HITACHI	
Q602	2SC458(D)	SILICON	HITACHI	
Q603	2SK105(F)	F.E.T.	NEC	D
Q603	2SK105(F)	F.E.T.	NEC	E
Q603	2SK105(F)	F.E.T.	NEC	H
Q604	2SC458(D)	SILICON	HITACHI	D
Q604	2SC458(D)	SILICON	HITACHI	E
Q604	2SC458(D)	SILICON	HITACHI	H
Q605	2SC458(C)	SILICON	HITACHI	
Q605	2SC458(C)	SILICON	HITACHI	
Q606	2SC458(C)	SILICON	HITACHI	
Q606	2SC458(C)	SILICON	HITACHI	
Q651	2SC458(C)	SILICON	HITACHI	D
Q651	2SC458(C)	SILICON	HITACHI	E
Q651	2SC458(C)	SILICON	HITACHI	H
Q652	2SC458(C)	SILICON	HITACHI	D
Q652	2SC458(C)	SILICON	HITACHI	E
Q652	2SC458(C)	SILICON	HITACHI	H
Q701	2SC458(C)	SILICON	HITACHI	
Q701	2SC458(C)	SILICON	HITACHI	
Q703	2SC1685(Q,R)	SILICON	MATSUSHITA	

ITEM	PART NUMBER	DESCRIPTION		VER
			MAKER	
Q703	2SC1685(Q,R)	SILICON	MATSUSHITA	
Q801	2SD313V(E)	SILICON	SANYO	
Q802	2SC2235(Y)	SILICON	TOSHIBA	
Q803	2SA1029(C)	SILICON	HITACHI	
Q803	2SA1029(C)	SILICON	HITACHI	
Q804	2SC458(C)	SILICON	HITACHI	
Q804	2SC458(C,D)	SILICON	HITACHI	
Q805	2SA1029(C)	SILICON	HITACHI	
Q805	2SA1029(C)		HITACHI	
Q806	2SC458(C)		HITACHI	
Q806	2SC458(C,D)		HITACHI	
Q807	2SA1029(C)		HITACHI	D
Q807	2SA1029(C)		HITACHI	E
Q807	2SA1029(C)		HITACHI	H
Q808	2SC458(C)		HITACHI	D
Q808	2SC458(C)		HITACHI	E
Q808	2SC458(C,D)		HITACHI	H

I.C.s

ITEM	PART NUMBER	DESCRIPTION		VER
			MAKER	
IC201	LA1235		SANYO	
IC301	LA1245		SANYO	
IC401	HA12016		HITACHI	
IC601	TD6104P		TOSHIBA	
IC602	TC9147AP		TOSHIBA	B
IC602	TC9147AP		TOSHIBA	C
IC602	TC9147AP		TOSHIBA	D
IC602	TC9147AP		TOSHIBA	E
IC602	TC9147AP		TOSHIBA	F
IC602	TC9147AP		TOSHIBA	H
IC602	TC9157P			G
IC901	TD6301AP		TOSHIBA	

Diodes

ITEM	PART NUMBER	DESCRIPTION	MAKER	VER
D101	SVC202(AB)	L.E.D.	SANYO	
D102	SVC202(AB)	L.E.D.	SANYO	
D103	SVC202(AB)	L.E.D.	SANYO	
D104	SVC202(AB)	L.E.D.	SANYO	
D201	1S2076-31	L.E.D.	HITACHI	
D202	1S2076-31	L.E.D.	HITACHI	
D301	KV1236Z	L.E.D.	TOKO	
D302	KV1236Z	L.E.D.	TOKO	
D303	1S2076-31	L.E.D.	HITACHI	
D305	1S2076-31	L.E.D.	HITACHI	D
D305	1S2076-31	L.E.D.	HITACHI	E
D305	1S2076-31	L.E.D.	HITACHI	H
D306	1S2076-31	L.E.D.	HITACHI	D
D306	1S2076-31	SILICON	HITACHI	E
D306	1S2076-31	SILICON	HITACHI	H
D307	1S2076-31	SILICON	HITACHI	
D351	KV1236Z	SILICON	TOKO	D
D351	KV1236Z	SILICON	TOKO	E
D351	KV1236Z	SILICON	TOKO	H
D352	KV1236Z	SILICON	TOKO	D
D352	KV1236Z	SILICON	TOKO	E
D352	KV1236Z	SILICON	TOKO	H
D353	1S2076-31	SILICON	HITACHI	D
D353	1S2076-31	SILICON	HITACHI	E
D353	1S2076-31	SILICON	HITACHI	H
D354	1S2076-31	SILICON	HITACHI	D
D354	1S2076-31	SILICON	HITACHI	E
D354	1S2076-31	SILICON	HITACHI	H
D355	1S2076-31	SILICON	HITACHI	D
D355	1S2076-31	SILICON	HITACHI	E
D355	1S2076-31	SILICON	HITACHI	H
D356	1S2076-31	SILICON	HITACHI	D
D356	1S2076-31	SILICON	HITACHI	E
D356	1S2076-31	SILICON	HITACHI	H
D361	1S2076-31	SILICON	HITACHI	D
D361	1S2076-31	SILICON	HITACHI	E
D361	1S2076-31	SILICON	HITACHI	H
D401	1S2076-31	SILICON	HITACHI	B
D401	1S2076-31	SILICON	HITACHI	C
D401	1S2076-31	SILICON	HITACHI	D
D401	1S2076-31	SILICON	HITACHI	E
D401	1S2076-31	SILICON	HITACHI	F
D401	1S2076-31	SILICON	HITACHI	G
D401	1S2076-31	SILICON	HITACHI	H
D402	1S2076-31	SILICON	HITACHI	
D403	1S2076-31	SILICON	HITACHI	E
D414	SLR-34DC50F	L.E.D.		B
D414	SLR-34DC50F	L.E.D.		C
D414	SLR-34DC50F	L.E.D.		D
D414	SLR-34DC50F	L.E.D.		E
D414	SLR-34DC50F	L.E.D.		F
D414	SLR-34DC50F	L.E.D.		G
D415	SLR-34DC50F	L.E.D.		B
D415	SLR-34DC50F	L.E.D.		C
D415	SLR-34DC50F	L.E.D.		D
D415	SLR-34DC50F	L.E.D.		E
D415	SLR-34DC50F	L.E.D.		F
D415	SLR-34DC50F	L.E.D.		G
D460	SLR-34VC50F	L.E.D.		
D461	SLR-55MC20F	L.E.D.		
D462	SLR-55MC20F	L.E.D.		
D463	SLR-55MC20F	L.E.D.		
D464	SLR-55MC20F	L.E.D.		
D465	SLR-55MC20F	L.E.D.		
D466	SLR-55MC20F	L.E.D.		
D467	SLR-55MC20F	L.E.D.		
D468	SLR-55MC20F	L.E.D.		
D469	SLR-55VC20F	L.E.D.		
D471	SLR-34MC50F	L.E.D.		
D472	SLR-34MC50F	L.E.D.		
D473	SLR-34MC50F	L.E.D.		
D504	1S2076-31	SILICON	HITACHI	
D505	1S2076-31	SILICON	HITACHI	
D511	1S2076-31	SILICON	HITACHI	
D551	1S2076-31	SILICON	HITACHI	
D601	1S2076-31	SILICON	HITACHI	
D602	1S2076-31	SILICON	HITACHI	
D701	1S2076-31	SILICON	HITACHI	
D702	1S2076-31	SILICON	HITACHI	
D801	ERB12-02RKL1	SILICON	FUJIDENKI	
D802	RD13EB3	ZENER	NEC	
D803	1S2076-31	SILICON	HITACHI	
D901	1S2076-31	SILICON	HITACHI	
D902	1S2076-31	SILICON	HITACHI	D
D902	1S2076-31	SILICON	HITACHI	E
D902	1S2076-31	SILICON	HITACHI	H

Coils

ITEM	PART NUMBER	DESCRIPTION	VER
L101	EQR2306-014	RF.COIL	
L102	EQR2306-010	RF.COIL	
L103	EQR2306-009	RF.COIL	
L104	EQR2406-004	RF.COIL	
L105	EQL3001-2R2KY	INDUCTOR	
L302	EQR1207-001	RF.COIL	
L311	EQL3001-102KY	INDUCTOR	
L351	EQR1307-001	RF.COIL	D
L351	EQR1307-001	RF.COIL	E
L351	EQR1307-001	RF.COIL	H
L352	EQL3001-101KY	INDUCTOR	D
L352	EQL3001-101KY	INDUCTOR	E
L352	EQL3001-101KY	INDUCTOR	H
T101	EQT2121-002	FM I.F.TRANSFORMER	
T201	EQT2140-003	I.F.TRANSFORMER	

Capacitors

ITEM	PART NUMBER	DESCRIPTION			VER
C102	QCF31HP-103	0.01MF	50V	CERAMIC	
C103	QCS31HJ-5R0	5.0PF	50V	CERAMIC	
C104	QCF31HP-223	0.022MF	50V	CERAMIC	
C105	QCS31HJ-5R0	5.0PF	50V	CERAMIC	
C106	QCS31HJ-2R0	2.0PF	50V	CERAMIC	B
C106	QCS31HJ-2R0	2.0PF	50V	CERAMIC	C
C106	QCS31HJ-2R0	2.0PF	50V	CERAMIC	D
C106	QCS31HJ-2R0	2.0PF	50V	CERAMIC	F
C106	QCS31HJ-2R0	2.0PF	50V	CERAMIC	G
C106	QCS31HJ-2R0	2.0PF	50V	CERAMIC	H
C106	QCS31HJ-7R0	7.0PF	50V	CERAMIC	E
C107	QCS31HJ-4R0	4.0PF	50V	CERAMIC	
C108	QCS31HJ-101	100PF	50V	CERAMIC	
C109	QCF31HP-223	0.022MF	50V	CERAMIC	
C110	QCF31HP-223	0.022MF	50V	CERAMIC	
C111	QCF31HP-223	0.022MF	50V	CERAMIC	
C112	QCT25TH-2R0	2.0PF	50V	CERAMIC	G
C112	QCT25TH-7R0	7.0PF	50V	CERAMIC	B
C112	QCT25TH-7R0	7.0PF	50V	CERAMIC	C
C112	QCT25TH-7R0	7.0PF	50V	CERAMIC	D
C112	QCT25TH-7R0	7.0PF	50V	CERAMIC	E
C112	QCT25TH-7R0	7.0PF	50V	CERAMIC	F
C112	QCT25TH-7R0	7.0PF	50V	CERAMIC	H
C113	QCS31HJ-7R0	7.0PF	50V	CERAMIC	
C114	QCS31HJ-220	22PF	50V	CERAMIC	
C115	QCF31HP-223	0.022MF	50V	CERAMIC	
C116	QCS31HJ-150	15PF	50V	CERAMIC	
C117	QCS31HJ-2R0	2.0PF	50V	CERAMIC	B
C117	QCS31HJ-2R0	2.0PF	50V	CERAMIC	C
C117	QCS31HJ-2R0	2.0PF	50V	CERAMIC	D
C117	QCS31HJ-2R0	2.0PF	50V	CERAMIC	F
C117	QCS31HJ-2R0	2.0PF	50V	CERAMIC	G
C117	QCS31HJ-2R0	2.0PF	50V	CERAMIC	H
C117	QCS31HJ-8R0	8.0PF	50V	CERAMIC	E

Capacitors

ITEM	PART NUMBER	DESCRIPTION			VER
C118	QCT25CH-2R0	2.0PF	50V	CERAMIC	
C119	QCF31HP-103	0.01MF	50V	CERAMIC	
C120	QCF31HP-103	0.01MF	50V	CERAMIC	
C121	QCF31HP-223	0.022MF	50V	CERAMIC	
C151	QCS31HJ-2R0	2.0PF	50V	CERAMIC	E
C201	QCF31HP-223	0.022MF	50V	CERAMIC	
C202	QCF31HP-223	0.022MF	50V	CERAMIC	
C203	QCF31HP-223	0.022MF	50V	CERAMIC	
C204	QCF31HP-223	0.022MF	50V	CERAMIC	
C205	QCS31HJ-221	220PF	50V	CERAMIC	
C206	QCF31HP-223	0.022MF	50V	CERAMIC	
C207	QCF31HP-223	0.022MF	50V	CERAMIC	
C208	QCF31HP-223	0.022MF	50V	CERAMIC	
C209	QCF31HP-223	0.022MF	50V	CERAMIC	
C210	QCF31HP-223	0.022MF	50V	CERAMIC	
C211	QET61HM-225	2.2MF	50V	ELECTRO	
C213	QCF31HP-223	0.022MF	50V	CERAMIC	
C214	QCF31HP-223	0.022MF	50V	CERAMIC	
C215	QET61HM-105	1MF	50V	ELECTRO	
C216	QET61AM-476	47MF	10V	ELECTRO	
C217	QET61HM-105	1MF	50V	ELECTRO	
C218	QET61EM-106	10MF	25V	ELECTRO	
C219	QCF31HP-223	0.022MF	50V	CERAMIC	
C231	QCC31EM-473	0.047MF	25V	CERAMIC	
C251	QET61AM-476	47MF	10V	ELECTRO	E
C252	QET61AM-476	47MF	10V	ELECTRO	E
C253	QET61EM-226	22MF	25V	ELECTRO	E
C301	QCS31HJ-5R0	5.0PF	50V	CERAMIC	
C302	QCF31HP-223	0.022MF	50V	CERAMIC	
C303	QCY31HK-102	1000PF	50V	CERAMIC	
C304	QCF31HP-223	0.022MF	50V	CERAMIC	
C305	QCF31HP-223	0.022MF	50V	CERAMIC	
C306	QCF31HP-223	0.022MF	50V	CERAMIC	
C307	QCF31HP-223	0.022MF	50V	CERAMIC	
C309	QCS31HJ-121	120PF	50V	CERAMIC	
C310	QCY31HK-102	1000PF	50V	CERAMIC	
C311	QFN31HK-473	0.047UF	50V	MYLAR	
C312	QFN31HK-223	0.022MF	50V	MYLAR	
C313	QFN31HK-223	0.022MF	50V	MYLAR	
C314	QCF31HP-223	0.022MF	50V	CERAMIC	
C315	QCY31HK-102	1000PF	50V	CERAMIC	
C316	QCS31HJ-180	18PF	50V	CERAMIC	
C317	QFP31HJ-431	430PF	50V	POLY	
C318	QCS31HJ-220	22PF	50V	CERAMIC	
C319	QCC31EM-473	0.047MF	25V	CERAMIC	
C320	QET61EM-106	10MF	25V	ELECTRO	
C321	QET61HM-105	1MF	50V	ELECTRO	
C322	QET61HM-105	1MF	50V	ELECTRO	
C323	QET61HM-475	4.7MF	50V	ELECTRO	
C324	QET61EM-226	22MF	25V	ELECTRO	
C325	QCF31HP-223	0.022MF	50V	CERAMIC	
C326	QCC31EM-473	0.047MF	25V	CERAMIC	
C330	QCF31HP-223	0.022MF	50V	CERAMIC	
C351	QCS31HJ-270	27PF	50V	CERAMIC	D
C351	QCS31HJ-270	27PF	50V	CERAMIC	E
C351	QCS31HJ-270	27PF	50V	CERAMIC	H
C352	QCC31EM-473	0.047MF	25V	CERAMIC	D
C352	QCC31EM-473	0.047MF	25V	CERAMIC	E
C352	QCC31EM-473	0.047MF	25V	CERAMIC	H
C353	QCF31HP-223	0.022MF	50V	CERAMIC	D
C353	QCF31HP-223	0.022MF	50V	CERAMIC	E
C353	QCF31HP-223	0.022MF	50V	CERAMIC	H
C354	QCF31HP-223	0.022MF	50V	CERAMIC	D
C354	QCF31HP-223	0.022MF	50V	CERAMIC	E
C354	QCF31HP-223	0.022MF	50V	CERAMIC	H
C355	QCS31HJ-181	180PF	50V	CERAMIC	D
C355	QCS31HJ-181	180PF	50V	CERAMIC	E
C355	QCS31HJ-181	180PF	50V	CERAMIC	H
C356	QCF31HP-223	0.022MF	50V	CERAMIC	D
C356	QCF31HP-223	0.022MF	50V	CERAMIC	E
C356	QCF31HP-223	0.022MF	50V	CERAMIC	H
C357	QCF31HP-223	0.022MF	50V	CERAMIC	D
C357	QCF31HP-223	0.022MF	50V	CERAMIC	E
C357	QCF31HP-223	0.022MF	50V	CERAMIC	H

ITEM	PART NUMBER	DESCRIPTION			VER
C358	QCT25CH-560	56PF	50V	CERAMIC	D
C358	QCT25CH-560	56PF	50V	CERAMIC	E
C358	QCT25CH-560	56PF	50V	CERAMIC	H
C359	QCT25CH-101	100PF	50V	CERAMIC	D
C359	QCT25CH-101	100PF	50V	CERAMIC	E
C359	QCT25CH-101	100PF	50V	CERAMIC	H
C360	QCT25CH-390	39PF	50V	CERAMIC	D
C360	QCT25CH-390	39PF	50V	CERAMIC	E
C360	QCT25CH-390	39PF	50V	CERAMIC	H
C361	QET61CM-226	22MF	16V	ELECTRO	D
C361	QET61CM-226	22MF	16V	ELECTRO	E
C361	QET61CM-226	22MF	16V	ELECTRO	H
C362	QET61CM-226	22MF	16V	ELECTRO	D
C362	QET61CM-226	22MF	16V	ELECTRO	E
C362	QET61CM-226	22MF	16V	ELECTRO	H
C363	QCT25CH-7R0	7.0PF	50V	CERAMIC	
C401	QET61EM-226	22MF	25V	ELECTRO	
C402	QET61EM-226	22MF	25V	ELECTRO	
C403	QET61HM-475	4.7MF	50V	ELECTRO	
C404	QET61HM-475	4.7MF	50V	ELECTRO	
C405	QET61EM-106	10MF	25V	ELECTRO	
C406	QET61HM-475	4.7MF	50V	ELECTRO	
C407	QEB61HM-474	0.47MF	50V	LLC.ELECTR	
C408	QET61HM-475	4.7MF	50V	ELECTRO	
C409	QET61HM-474	0.47MF	50V	ELECTRO	
C410	QFP31HJ-102	1000PF	50V	POLY	
C411	QFN31HK-182	1800PF	50V	MYLAR	
C412	QFN31HK-473	0.047UF	50V	MYLAR	
C413	QFN31HJ-102	1000PF	50V	MYLAR	D
C413	QFN31HJ-102	1000PF	50V	MYLAR	E
C413	QFN31HJ-102	1000PF	50V	MYLAR	H
C413	QFN31HJ-152	1500PF	50V	MYLAR	B
C413	QFN31HJ-152	1500PF	50V	MYLAR	C
C413	QFN31HJ-152	1500PF	50V	MYLAR	F
C413	QFN31HJ-152	1500PF	50V	MYLAR	G
C414	QFN31HJ-102	1000PF	50V	MYLAR	D
C414	QFN31HJ-102	1000PF	50V	MYLAR	E
C414	QFN31HJ-102	1000PF	50V	MYLAR	H
C414	QFN31HJ-152	1500PF	50V	MYLAR	B
C414	QFN31HJ-152	1500PF	50V	MYLAR	C
C414	QFN31HJ-152	1500PF	50V	MYLAR	F
C414	QFN31HJ-152	1500PF	50V	MYLAR	G
C451	QCS31HJ-470	47PF	50V	CERAMIC	
C452	QCY31HK-102	1000PF	50V	CERAMIC	E
C453	QCY31HK-102	1000PF	50V	CERAMIC	E
C501	QET61HM-105	1MF	50V	ELECTRO	
C601	QCF31HP-103	0.01MF	50V	CERAMIC	
C602	QCF31HP-103	0.01MF	50V	CERAMIC	
C603	QCF31HP-103	0.01MF	50V	CERAMIC	
C611	QCS31HJ-100	10PF	50V	CERAMIC	
C612	QCS31HJ-100	10PF	50V	CERAMIC	
C613	QET61HM-105	1MF	50V	ELECTRO	
C614	QET61HM-105	1MF	50V	ELECTRO	
C615	QCF31HP-103	0.01MF	50V	CERAMIC	
C616	QFN31HK-473	0.047UF	50V	MYLAR	D
C616	QFN31HK-473	0.047UF	50V	MYLAR	E
C616	QFN31HK-473	0.047UF	50V	MYLAR	H
C617	QFN31HK-102	1000PF	50V	MYLAR	D
C617	QFN31HK-102	1000PF	50V	MYLAR	E
C617	QFN31HK-102	1000PF	50V	MYLAR	H
C618	QCF31HP-103	0.01MF	50V	CERAMIC	
C619	QCF31HP-103	0.01MF	50V	CERAMIC	
C620	QET50JM-228	2200MF	6.3V	ELECTRO	
C621	QET61CM-476	47MF	16V	ELECTRO	
C622	QET61EM-106	10MF	25V	ELECTRO	
C623	QEN61HM-225	2.2MF	50V	NON POLE	
C624	QCY31HK-102	1000PF	50V	CERAMIC	
C710	QCF31HP-103	0.01MF	50V	CERAMIC	
C711	QCF31HP-223	0.022MF	50V	CERAMIC	
C801	QCF31HP-103	0.01MF	50V	CERAMIC	
C802	QET51EM-228	2200MF	25V	ELECTRO	
C803	QET51CM-227	220MF	16V	ELECTRO	
C811	QCF31HP-473	0.047MF	50V	CERAMIC	

Capacitors

ITEM	PART NUMBER	DESCRIPTION			VER
TC101	QAT2001-001			TRIMMER	
TC102	QAT2001-001			TRIMMER	
TC103	QAT2001-001			TRIMMER	
TC301	QAT2001-005	15PF	50V	TRIMMER	
TC302	QAT2001-005	15PF	50V	TRIMMER	
TC351	QAT2001-005	15PF	50V	TRIMMER	D
TC351	QAT2001-005	15PF	50V	TRIMMER	E
TC351	QAT2001-005	15PF	50V	TRIMMER	H
TC352	QAT2001-005	15PF	50V	TRIMMER	D
TC352	QAT2001-005	15PF	50V	TRIMMER	E
TC352	QAT2001-005	15PF	50V	TRIMMER	H

Resistors

ITEM	PART NUMBER	DESCRIPTION			VER
R101	QRD141J-330S	33	1/4W	CARBON	
R102	QRD141J-221S	220	1/4W	CARBON	
R103	QRD141J-473S	47K	1/4W	CARBON	
R104	QRD141J-473S	47K	1/4W	CARBON	
R105	QRD141J-473S	47K	1/4W	CARBON	
R106	QRD141J-223S	22K	1/4W	CARBON	
R107	QRD141J-222S	2.2K	1/4W	CARBON	
R107	QRD141J-392S	3.9K	1/4W	CARBON	
R108	QRD141J-102S	1K	1/4W	CARBON	
R109	QRD141J-331S	330	1/4W	CARBON	
R110	QRD141J-561S	560	1/4W	CARBON	
R111	QRD141J-103S	10K	1/4W	CARBON	
R112	QRD141J-682S	6.8K	1/4W	CARBON	
R113	QRD141J-222S	2.2K	1/4W	CARBON	
R114	QRD141J-562S	5.6K	1/4W	CARBON	
R115	QRD141J-224S	220K	1/4W	CARBON	
R116	QRD141J-331S	330	1/4W	CARBON	
R117	QRD141J-820S	82	1/4W	CARBON	
R151	QRD141J-331S	330	1/4W	CARBON	E
R152	QRD141J-224S	220K	1/4W	CARBON	E
R201	QRD141J-821S	820	1/4W	CARBON	
R202	QRD141J-101S	100	1/4W	CARBON	
R203	QRD141J-391S	390	1/4W	CARBON	
R204	QRD141J-101S	100	1/4W	CARBON	
R205	QRD141J-562S	5.6K	1/4W	CARBON	
R206	QRD141J-681S	680	1/4W	CARBON	
R207	QRD141J-102S	1K	1/4W	CARBON	
R208	QRD141J-330S	33	1/4W	CARBON	
R209	QRD141J-331S	330	1/4W	CARBON	
R210	QRD141J-103S	10K	1/4W	CARBON	
R211	QRD141J-103S	10K	1/4W	CARBON	
R212	QRD141J-561S	560	1/4W	CARBON	
R213	QRD141J-123S	12K	1/4W	CARBON	B
R213	QRD141J-183S	18K	1/4W	CARBON	C
R213	QRD141J-183S	18K	1/4W	CARBON	D
R213	QRD141J-183S	18K	1/4W	CARBON	E
R213	QRD141J-183S	18K	1/4W	CARBON	F
R213	QRD141J-183S	18K	1/4W	CARBON	G
R214	QRD141J-332S	3.3K	1/4W	CARBON	
R215	QRD141J-562S	5.6K	1/4W	CARBON	
R216	QRD141J-682S	6.8K	1/4W	CARBON	
R217	QRD141J-473S	47K	1/4W	CARBON	
R251	QRD141J-472S	4.7K	1/4W	CARBON	E
R252	QRD141J-153S	15K	1/4W	CARBON	E
R253	QRD141J-224S	220K	1/4W	CARBON	E
R254	QRD141J-393S	39K	1/4W	CARBON	E
R255	QRD141J-562S	5.6K	1/4W	CARBON	E
R256	QRD141J-222S	2.2K	1/4W	CARBON	E
R257	QRD141J-331S	330	1/4W	CARBON	E
R301	QRD141J-223S	22K	1/4W	CARBON	
R303	QRD141J-152S	1.5K	1/4W	CARBON	
R305	QRD141J-271S	270	1/4W	CARBON	
R306	QRD141J-331S	330	1/4W	CARBON	
R307	QRD141J-393S	39K	1/4W	CARBON	
R308	QRD141J-562S	5.6K	1/4W	CARBON	
R309	QRD141J-103S	10K	1/4W	CARBON	
R310	QRD141J-101S	100	1/4W	CARBON	
R311	QRD141J-221S	220	1/4W	CARBON	
R312	QRD141J-103S	10K	1/4W	CARBON	
R313	QRD141J-473S	47K	1/4W	CARBON	
R351	QRD141J-223S	22K	1/4W	CARBON	D
R351	QRD141J-223S	22K	1/4W	CARBON	E
R351	QRD141J-223S	22K	1/4W	CARBON	H
R352	QRD141J-391S	390	1/4W	CARBON	D
R352	QRD141J-391S	390	1/4W	CARBON	E
R352	QRD141J-391S	390	1/4W	CARBON	H
R353	QRD141J-472S	4.7K	1/4W	CARBON	D
R353	QRD141J-472S	4.7K	1/4W	CARBON	E
R353	QRD141J-472S	4.7K	1/4W	CARBON	H
R354	QRD141J-223S	22K	1/4W	CARBON	D
R354	QRD141J-223S	22K	1/4W	CARBON	E
R354	QRD141J-223S	22K	1/4W	CARBON	H
R355	QRD141J-102S	1K	1/4W	CARBON	D
R355	QRD141J-102S	1K	1/4W	CARBON	E
R355	QRD141J-102S	1K	1/4W	CARBON	H
R356	QRD141J-224S	220K	1/4W	CARBON	D
R356	QRD141J-224S	220K	1/4W	CARBON	E
R356	QRD141J-224S	220K	1/4W	CARBON	H
R357	QRD141J-102S	1K	1/4W	CARBON	D
R357	QRD141J-102S	1K	1/4W	CARBON	E
R357	QRD141J-102S	1K	1/4W	CARBON	H
R358	QRD141J-223S	22K	1/4W	CARBON	D
R358	QRD141J-223S	22K	1/4W	CARBON	E
R358	QRD141J-223S	22K	1/4W	CARBON	H
R359	QRD141J-391S	390	1/4W	CARBON	D
R359	QRD141J-391S	390	1/4W	CARBON	E
R359	QRD141J-391S	390	1/4W	CARBON	H
R360	QRD141J-102S	1K	1/4W	CARBON	D
R360	QRD141J-102S	1K	1/4W	CARBON	E
R360	QRD141J-102S	1K	1/4W	CARBON	H
R361	QRD141J-223S	22K	1/4W	CARBON	D
R361	QRD141J-223S	22K	1/4W	CARBON	E
R361	QRD141J-223S	22K	1/4W	CARBON	H
R362	QRD141J-473S	47K	1/4W	CARBON	D
R362	QRD141J-473S	47K	1/4W	CARBON	E
R362	QRD141J-473S	47K	1/4W	CARBON	H
R363	QRD141J-223S	22K	1/4W	CARBON	D
R363	QRD141J-223S	22K	1/4W	CARBON	E
R363	QRD141J-223S	22K	1/4W	CARBON	H
R364	QRD141J-223S	22K	1/4W	CARBON	D
R364	QRD141J-223S	22K	1/4W	CARBON	E
R364	QRD141J-223S	22K	1/4W	CARBON	H
R401	QRD141J-473S	47K	1/4W	CARBON	
R403	QRD141J-473S	47K	1/4W	CARBON	
R404	QVP4A0B-104	100K		VARIABLE	
R405	QRD141J-513S	51K	1/4W	CARBON	
R406	QRD141J-513S	51K	1/4W	CARBON	
R407	QRD141J-182S	1.8K	1/4W	CARBON	D
R407	QRD141J-182S	1.8K	1/4W	CARBON	E
R407	QRD141J-182S	1.8K	1/4W	CARBON	H
R407	QRD141J-272S	2.7K	1/4W	CARBON	B
R407	QRD141J-272S	2.7K	1/4W	CARBON	C
R407	QRD141J-272S	2.7K	1/4W	CARBON	F
R407	QRD141J-272S	2.7K	1/4W	CARBON	G
R408	QRD141J-182S	1.8K	1/4W	CARBON	D
R408	QRD141J-182S	1.8K	1/4W	CARBON	E
R408	QRD141J-182S	1.8K	1/4W	CARBON	H
R408	QRD141J-272S	2.7K	1/4W	CARBON	B
R408	QRD141J-272S	2.7K	1/4W	CARBON	C
R408	QRD141J-272S	2.7K	1/4W	CARBON	F
R408	QRD141J-272S	2.7K	1/4W	CARBON	G
R409	QRD141J-223S	22K	1/4W	CARBON	
R410	QRD141J-223S	22K	1/4W	CARBON	
R411	QRD141J-152S	1.5K	1/4W	CARBON	
R412	QRD141J-152S	1.5K	1/4W	CARBON	
R413	QRD141J-102S	1K	1/4W	CARBON	
R413	QRD141J-122S	1.2K	1/4W	CARBON	E
R414	QRD141J-102S	1K	1/4W	CARBON	

Resistors

ITEM	PART NUMBER	DESCRIPTION			VER
R414	QRD141J-122S	1.2K	1/4W	CARBON	E
R415	QRD141J-222S	2.2K	1/4W	CARBON	
R416	QRD141J-222S	2.2K	1/4W	CARBON	
R417	QRD141J-223S	22K	1/4W	CARBON	
R418	QRD141J-223S	22K	1/4W	CARBON	
R420	QRD141J-103S	10K	1/4W	CRABON	
R421	QRD141J-102S	1K	1/4W	CARBON	
R422	QRD141J-105S	1M	1/4W	CARBON	
R423	QRD141J-682S	6.8K	1/4W	CARBON	
R424	QVP4A0B-222	2.2K		VARIABLE	
R425	QRD141J-104S	100K	1/4W	CARBON	
R426	QRD141J-222S	2.2K	1/4W	CARBON	
R451	QRD141J-473S	47K	1/4W	CARBON	E
R461	QRD141J-102S	1K	1/4W	CARBON	
R462	QRD141J-102S	1K	1/4W	CARBON	
R463	QRD141J-222S	2.2K	1/4W	CARBON	
R464	QRD141J-681S	680	1/4W	CARBON	
R465	QRD141J-331S	330	1/4W	CARBON	
R466	QRD141J-102S	1K	1/4W	CARBON	
R467	QRD141J-471S	470	1/4W	CARBON	
R501	QRD141J-682S	6.8K	1/4W	CARBON	
R504	QRD141J-123S	12K	1/4W	CARBON	
R505	QRD141J-473S	47K	1/4W	CARBON	
R506	QRD141J-223S	22K	1/4W	CARBON	
R507	QRD141J-102S	1K	1/4W	CARBON	
R508	QRD141J-224S	220K	1/4W	CARBON	
R600	QRD141J-103S	10K	1/4W	CARBON	
R601	QRD141J-473S	47K	1/4W	CARBON	
R602	QRD141J-823S	82K	1/4W	CARBON	
R603	QRD141J-472S	4.7K	1/4W	CARBON	
R604	QRD141J-122S	1.2K	1/4W	CARBON	D
R604	QRD141J-122S	1.2K	1/4W	CARBON	E
R604	QRD141J-122S	1.2K	1/4W	CARBON	H
R605	QRD141J-301S	300	1/4W	CARBON	D
R605	QRD141J-301S	300	1/4W	CARBON	E
R605	QRD141J-301S	300	1/4W	CARBON	H
R606	QRD141J-123S	12K	1/4W	CARBON	D
R606	QRD141J-123S	12K	1/4W	CARBON	E
R606	QRD141J-123S	12K	1/4W	CARBON	H
R607	QRD141J-103S	10K	1/4W	CARBON	
R608	QRD141J-103S	10K	1/4W	CARBON	D
R608	QRD141J-103S	10K	1/4W	CARBON	E
R608	QRD141J-103S	10K	1/4W	CARBON	H
R609	QRD141J-222S	2.2K	1/4W	CARBON	D
R609	QRD141J-222S	2.2K	1/4W	CRABON	E
R609	QRD141J-222S	2.2K	1/4W	CARBON	H
R610	QRD141J-333S	33K	1/4W	CARBON	
R611	QRD141J-222S	2.2K	1/4W	CARBON	
R612	QRD141J-102S	1K	1/4W	CARBON	
R613	QRD141J-331S	330	1/4W	CARBON	
R614	QRD141J-152S	1.5K	1/4W	CARBON	
R615	QRD141J-222S	2.2K	1/4W	CARBON	
R616	QRD141J-103S	10K	1/4W	CARBON	
R617	QRD141J-222S	2.2K	1/4W	CARBON	
R621	QRD141J-561S	560	1/4W	CARBON	
R624	QRD141J-103S	10K	1/4W	CARBON	
R625	QRD141J-103S	10K	1/4W	CARBON	
R626	QRD141J-103S	10K	1/4W	CRABON	
R627	QRD141J-103S	10K	1/4W	CARBON	
R628	QRD141J-103S	10K	1/4W	CARBON	
R629	QRD141J-223S	22K	1/4W	CARBON	
R631	QRD141J-820S	82	1/4W	CARBON	
R651	QRD141J-563S	56K	1/4W	CARBON	
R651	QRD141J-563S	56K	1/4W	CARBON	
R651	QRD141J-563S	56K	1/4W	CARBON	
R652	QRD141J-104S	100K	1/4W	CARBON	
R653	QRD141J-222S	2.2K	1/4W	CARBON	D
R653	QRD141J-222S	2.2K	1/4W	CARBON	E
R653	QRD141J-222S	2.2K	1/4W	CARBON	H
R654	QRD141J-563S	56K	1/4W	CARBON	D
R654	QRD141J-563S	56K	1/4W	CARBON	E
R654	QRD141J-563S	56K	1/4W	CARBON	H
R655	QRD141J-472S	4.7K	1/4W	CARBON	D
R655	QRD141J-472S	4.7K	1/4W	CARBON	E

ITEM	PART NUMBER	DESCRIPTION			VER
R655	QRD141J-472S	4.7K	1/4W	CARBON	H
R661	QRD141J-823S	82K	1/4W	CARBON	
R701	QRD141J-562S	5.6K	1/4W	CARBON	
R702	QRD141J-183S	18K	1/4W	CARBON	
R703	QRD141J-682S	6.8K	1/4W	CARBON	
R707	QRD141J-682S	6.8K	1/4W	CARBON	
R708	QRD141J-393S	39K	1/4W	CARBON	
R709	QRD141J-473S	47K	1/4W	CARBON	
R710	QRD141J-223S	22K	1/4W	CARBON	
R711	QRD141J-472S	4.7K	1/4W	CARBON	
R712	QRD141J-393S	39K	1/4W	CARBON	
R713	QRD141J-473S	47K	1/4W	CARBON	
R801	QRD141J-102S	1K	1/4W	CARBON	
R802	QRD141J-681S	680	1/4W	CARBON	
R803	QRD141J-472S	4.7K	1/4W	CARBON	
R804	QRD141J-622S	6.2K	1/4W	CARBON	
R805	QRD141J-470S	47	1/4W	CARBON	
R806	QRD141J-224S	220K	1/4W	CARBON	
R807	QRD141J-473S	47K	1/4W	CARBON	
R811	QRD141J-472S	4.7K	1/4W	CARBON	
R812	QRD141J-103S	10K	1/4W	CARBON	
R813	QRD141J-473S	47K	1/4W	CARBON	
R814	QRD141J-472S	4.7K	1/4W	CARBON	
R815	QRD141J-473S	47K	1/4W	CARBON	
R816	QRD141J-103S	10K	1/4W	CARBON	
R817	QRD141J-103S	10K	1/4W	CARBON	D
R817	QRD141J-473S	47K	1/4W	CARBON	E
R817	QRD141J-473S	47K	1/4W	CARBON	H
R818	QRD141J-473S	47K	1/4W	CARBON	D
R818	QRD141J-473S	47K	1/4W	CARBON	E
R818	QRD141J-473S	47K	1/4W	CARBON	H
R819	QRD141J-103S	10K	1/4W	CARBON	D
R819	QRD141J-103S	10K	1/4W	CARBON	E
R819	QRD141J-103S	10K	1/4W	CARBON	H
R821	QRD141J-100S	10	1/4W	CARBON	
R901	QRC128K-275E	2.7M	1/2W	COMPOSI	
RA901	ERGSBXK-472	4.7K		RESISTOR ARRAY	
RA902	ERGSBXK-472	4.7K		RESISTOR ARRAY	

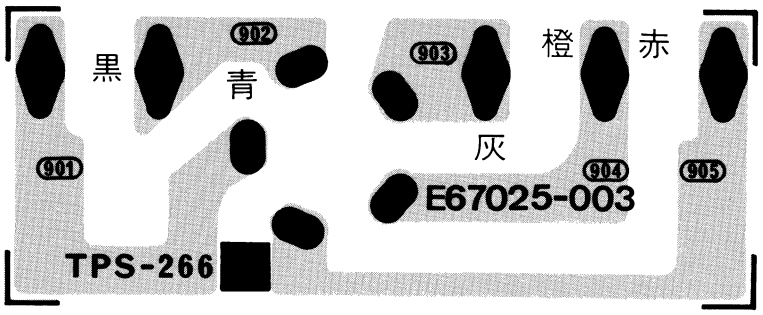
Others

ITEM	PART NUMBER	DESCRIPTION	VER
	EMB91YV-201A	ANTENNA TERMINAL	E
	E03572-016	TERMINAL BOARD	B
	E03572-016	TERMINAL BOARD	C
	E03572-016	TERMINAL BOARD	D
	E03572-016	TERMINAL BOARD	F
	E03572-016	TERMINAL BOARD	G
	E03572-016	TERMINAL BOARD	H
	E65508-002	TAB	
	E65508-002	TAB	
	E65508-002	TAB	
	E65508-002	TAB	
	E65508-002	TAB	
	E65508-002	TAB	
	E65508-002	TAB	
	E10942-101	CIRCUIT BOARD	B
	E10942-101	CIRCUIT BOARD	C
	E10942-101	CIRCUIT BOARD	D
	E10942-101	CIRCUIT BOARD	E
	E10942-101	CIRCUIT BOARD	F
	E10942-101	CIRCUIT BOARD	G
	E10942-101	CIRCUIT BOARD	H
	E303242-001	LED HOLDER	
	E65396-003	EARTH PLATE	
	E67642-002	SHIELD PLATE	
	E70859-001	EARTH PLATE	

Others

ITEM	PART NUMBER	DESCRIPTION	VER
	E69328-001	SHIELD COVER	
D311	1SS108	SILICON	
F901	EMG7331-001	FUSE CLIP	C
F901	EMG7331-001	FUSE CLIP	D
F901	EMG7331-001	FUSE CLIP	E
F901	EMG7331-001	FUSE CLIP	F
F901	EMG7331-001	FUSE CLIP	G
J001	EMN00TV-201A	2P PIN JACK ASS'Y	
P001	QMV5005-003	3P PLUG ASS'Y	
S001	QSS2201-002	SLIDE SWITCH	G
S001	QSS2201-002	SLIDE SWITCH	C
S461	ESP0001-007	PUSH SWITCH	
S462	ESP0001-007	PUSH SWITCH	
S463	ESP0001-007	PUSH SWITCH	
S464	ESP0001-007	PUSH SWITCH	
S465	ESP0001-007	PUSH SWITCH	
S466	ESP0001-007	PUSH SWITCH	
S467	ESP0001-007	PUSH SWITCH	
S468	ESP0001-007	PUSH SWITCH	
S469	ESP0001-007	PUSH SWITCH	
S470	ESP0001-007	PUSH SWITCH	
S471	ESP0001-007	PUSH SWITCH	
S472	ESP0001-007	PUSH SWITCH	
S473	ESP0001-007	PUSH SWITCH	
S474	ESP0001-007	PUSH SWITCH	D
S474	ESP0001-007	PUSH SWITCH	E
S601	QST5101-E03	PUSH SWITCH	
S602	QST5101-E03	PUSH SWITCH	
S801	QST4102-E06	PUSH SWITCH	
T303	ECB1560-001	CERAMIC FILTER	
CF101	ECB2118-001R	CERAMIC FILTER	D
CF101	ECB2118-001R	CERAMIC FILTER	E
CF101	ECB2118-001R	CERAMIC FILTER	H
CF101	ECB2123-002R	CERAMIC FILTER	B
CF101	ECB2118-001R	CERAMIC FILTER	G
CF101	ECB2123-002R	CERAMIC FILTER	
CF101	ECB2123-002R	CERAMIC FILTER	
CF102	ECB2118-001R	CERAMIC FILTER	
CF102	ECB2118-001R	CERAMIC FILTER	
CF102	ECB2118-001R	CERAMIC FILTER	
CF102	ECB2113-001R	CERAMIC FILTER	
CF102	ECB2123-002R	CERAMIC FILTER	
CF102	ECB2123-002R	CERAMIC FILTER	
CF102	ECB2123-002R	CERAMIC FILTER	
FL901	ELU0001-013	F.L.TUBE	
LP251	EQF0102-001	FILTER	
LP401	EQF0101-002	FILTER	
SF101	EQF0101-005	FILTER	
TP002	E67764-002	TERMINAL ASS'Y	
TP003	E67764-002	TERMINAL ASS'Y	
TP004	E67764-002	TERMINAL ASS'Y	
TP005	E67764-002	TERMINAL ASS'Y	
TP005	E67764-002	TERMINAL ASS'Y	
WT101	E67764-005	TERMINAL ASS'Y	
WT101	E67764-005	TERMINAL ASS'Y	
WT101	E67764-005	TERMINAL ASS'Y	
WT101	E67764-005	TERMINAL ASS'Y	
WT101	E67764-007	TERMINAL ASS'Y	
WT101	E67764-007	TERMINAL ASS'Y	
WT101	E67764-007	TERMINAL ASS'Y	
WT801	E67764-104	TERMINAL ASS'Y	
WT901	E67764-202	TERMINAL ASS'Y	
WT901	E67764-202	TERMINAL ASS'Y	
WT901	E67764-202	TERMINAL ASS'Y	
WT901	E67764-202	TERMINAL ASS'Y	
WT901	E67764-203	TERMINAL ASS'Y	
WT901	E67764-203	TERMINAL ASS'Y	
WT901	E67764-203	TERMINAL ASS'Y	
XT601	ECX0007-200KC	CRYSTAL	

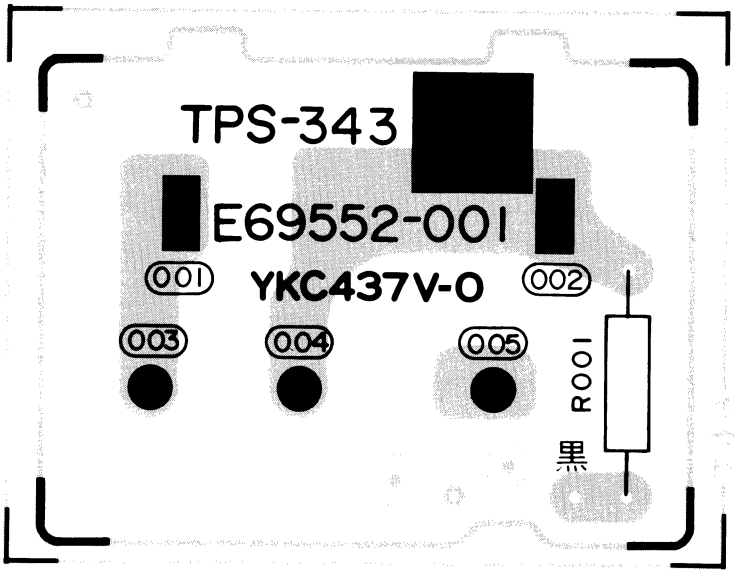
3-(2) TPS-266C Voltage Selector P.C.Board Ass'y



(for U.S Military Market, Republic at South Africa & other Countries Areas)

	⚠	Parts No.	Parts Name		Q'ty	
		QSR0074-001	Voltage Selector		1	
		E66342-001	Voltage Selector Holder		1	
		E43727-002	Tab		5	
		E67025-003	Circuit Board		1	

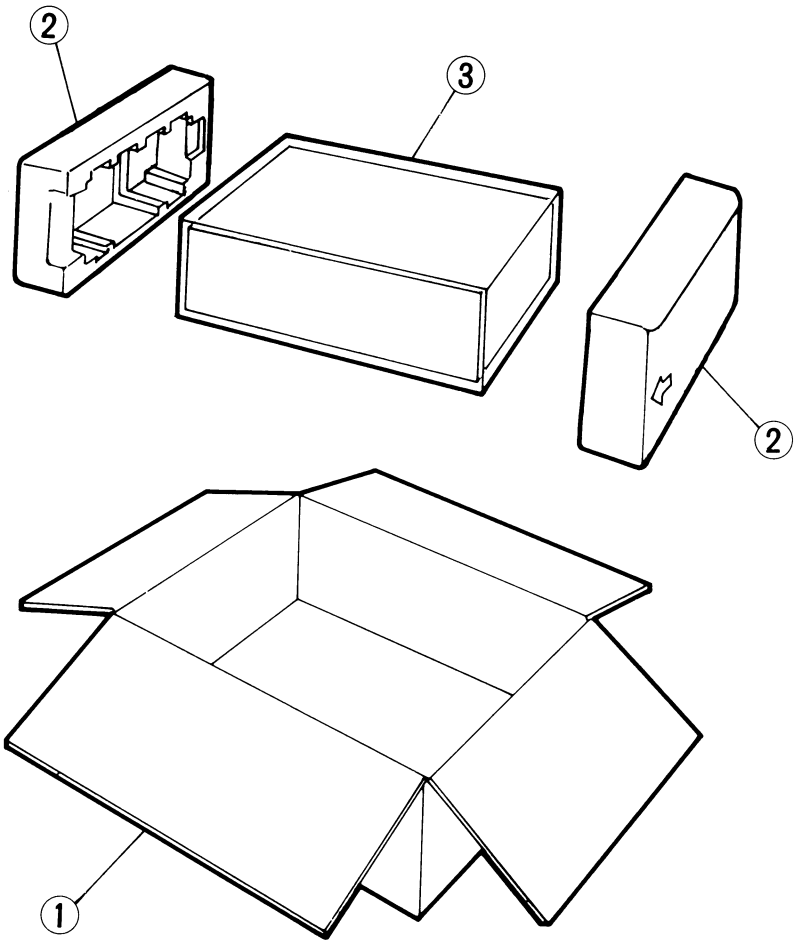
3-(3) TPS-343CBS Primary P.C.Board Ass'y



(for U.K.only)

	⚠	Parts No.	Parts Name		Q'ty	
		E65508-002	Tab		2	
		E43727-002	Tab		3	
		E302244-003	C.B. Case		1	
		SBSB3008N	Screw		1	
		E69552-001BS	Circuit Board		1	

4. Packing Materials and Part Numbers



No.	Part Number	Part Name	Description	Areas
1	PK-TX200E	Packing Case	Silver	J,C,P
	PK-TX200BE	"	Black	J,C,P
	PK-TX200U		Silver	U,PG,A,UA
	PK-TX200BU	"	Black	U,PG,A,UA
	PK-TX200LE		Silver	LE,LBS,LG
	PK-TX200BLE	"	Black	LE,LBS,LG
	PK-TX200LES		Silver	LES
	PK-TX200BLES	"	Black	LES
2	NZ-TX200E	Packing Pad	Silver	
	NZ-TX200BE	"	Black	
3	E68142-005	Protect Sheet		

The Marks for Designated Areas.
J .....U.S.A.
C .....Canada
LE .....Europe
LG .....West Germany
A .....Australia
UA .....Republic of South Africa
P,PG...U.S.Military Market
LES ....Spain
LBS ....U.K.
U .....Other Countries

5. Accessories List

Part Number	Part name	Q'ty	Description	Area
E30580-1163A	Instruction Book	1		J,C,U,P,PG,A,LE,LES,LG,UA
E30580-1163ABS	Instruction Book	1		LBS
BT20048	Warranty Card	1		J,P,PG
BT20025D	Warranty Card	1		C
BT20029B	Warranty Card	1		A
BT20013C	Warranty Card	1		LBS
BT20057	Warranty Card	1		LG
E03479-001B	Signal Cord	1		
E03614-004	Built-in Antenna	1		J,C,P,PG,A,LE,LES,LBS,US
E67007-001	Wire Antenna Ass'y	1		LG
E04056	Siemena Plug	1		U,PG,UA
BT20044D	Safety Instruction Sheet	1		J
BT20046A	Service Information Card	1		P,PG
BT20045B	Service Information Card	1		J
BT20071	Service Center List	1		C
E60965-001BS	Warning Label	1		LBS
E33754-001	Tie Band	1		LBS
BT20054-005A	FTZ Information Sheet	1		LG
BT20066	EEC Agency	1		LBS,LG
E66416-003	Envelope	1		J
E41202-2	Envelope	1		A,C,J,LE,LES,LG,U,P,PG,UA
E41202-2B	Envelope	1		LBS
E60932-007	Caution Sheet	1		U,PG
E60932-005	Caution Sheet	1		P
E60932-008	Caution Sheet	1		UA

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